

# TECHNOLOGY

REVIEW *July* 1949

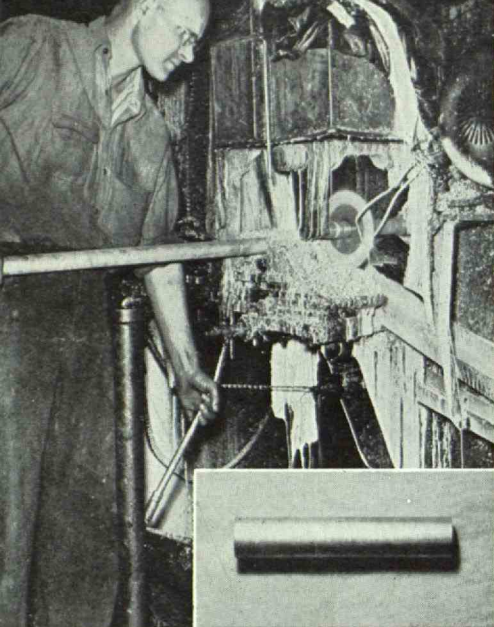


# technology review

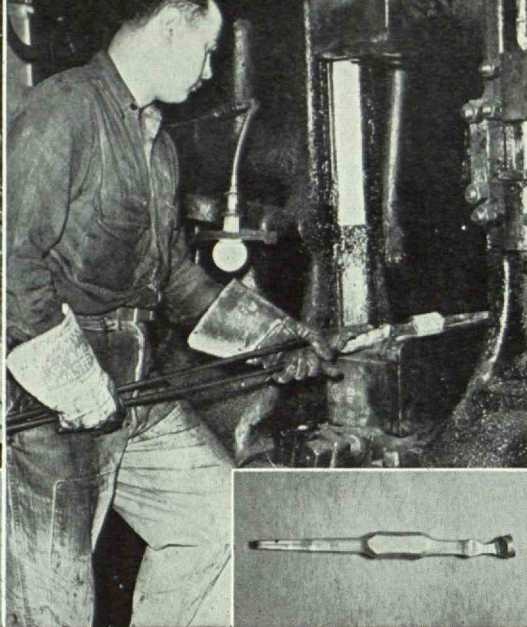
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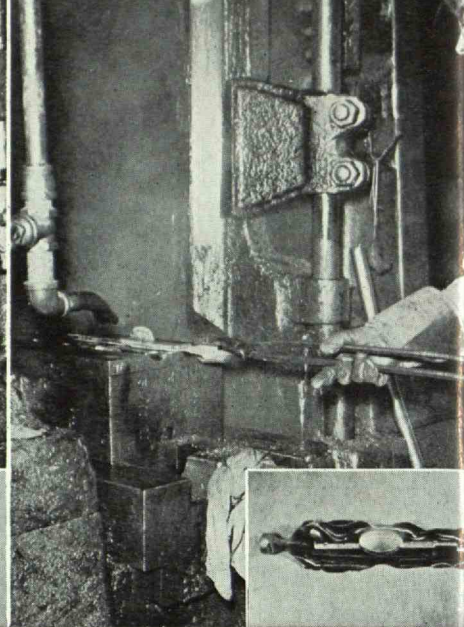




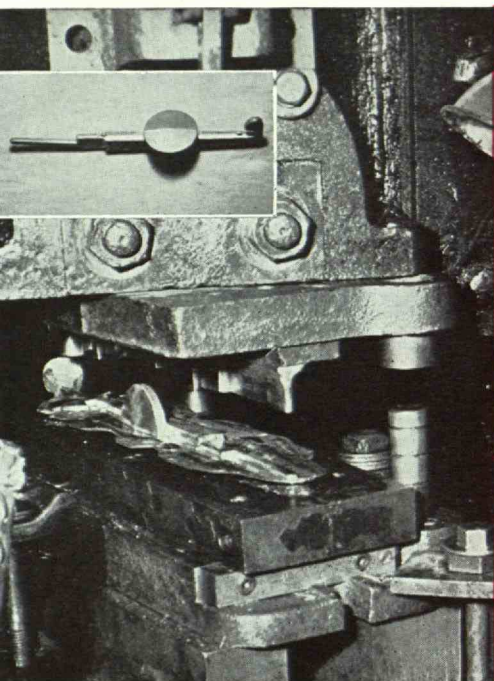
**Cutting Bar**



**Lengthening and Shaping**



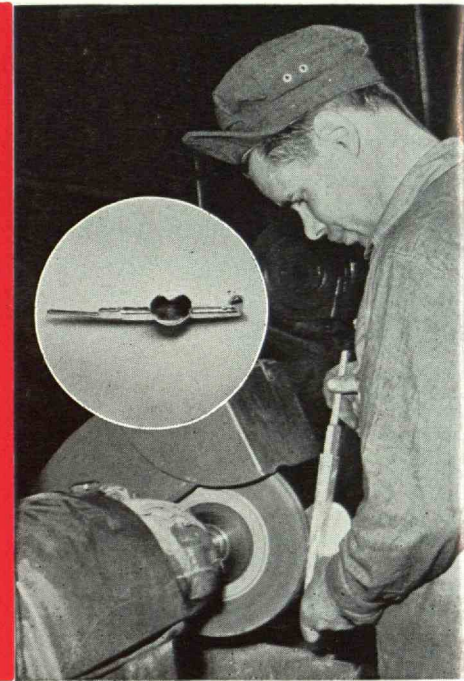
**Shaping to the Die**



**Trimming the Flash**

# **FORGING ALUMINUM**

**into  
Pressure Cooker Tops**



**Finishing and Polishing**

# **The Harvey Metal Corporation**

**HAROLD B. HARVEY '05**

***Engineers and Manufacturers***

**74th Street and Ashland Avenue**

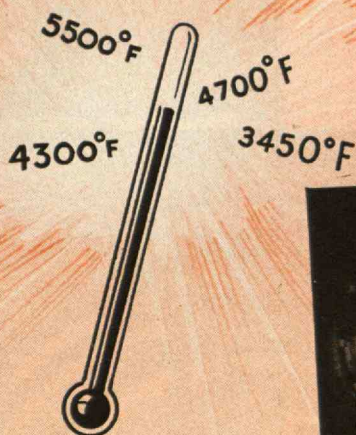
**Chicago 36, Illinois**

**FORGINGS IN ALUMINUM — BRASS — BRONZE — COPPER — MAGNESIUM — MONEL — ALLOYS**

**MACHINING FACILITIES**



# TEMPERATURES *TWICE* THE MELTING POINT OF STEEL!



## Industry Uses These Temperatures Today ... with Norton-Developed Refractories

TEMPERATURES as high as 4300° F. for the sintering of carbides . . . up to 4700° F. in the manufacture of acetylene . . . even up to 5500° F. in certain research projects . . . that's the way industry is using heat today. And to handle this heat it is turning to Norton.

Long the acknowledged leader in the abrasive industry, Norton is also the pioneer in the development of refractories for handling today's super temperatures . . . pure oxide refractories of thoria, zirconia, beryllia, fused magnesia (MAGNORITE\*) and fused alumina (ALUNDUM\*).

Other types of Norton refractories are handling heat for many industries—chemical, metal, ceramic, power generating and gas generating.

\*Trade-mark reg. U. S. Pat. Off.



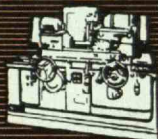
The main Worcester plant of Norton Company—world's largest producer of abrasive products

**NORTON COMPANY • WORCESTER 6, MASS.**

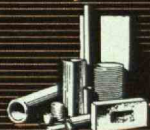
(Behr-Manning, Troy, N. Y. is a Norton Division)



GRINDING WHEELS



GRINDING MACHINES



REFRATORIES



NORBIDE



NON-SLIP FLOORS



LABELING MACHINES

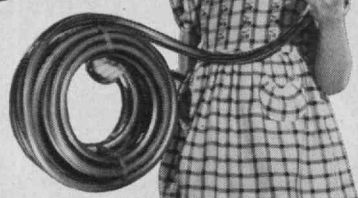


ABRASIVE PAPER  
AND CLOTH . . .  
SHARPENING STONES



# So Light...

## A CHILD EASILY CARRIES 50 FEET WITH ONE HAND!



**S**PECTACULAR LIGHT WEIGHT... small bulk... ease of handling and storing... these are outstanding features of SANDEE Feather-Lite Copolymer Garden Hose! In fact, it is about *one-third the weight of ordinary hose* yet gives full water volume. Here's the kind of gardening ease and economy

you've long wanted. An extremely tough and *long lived* hose, that resists hottest sun, zero cold, greases, oils, alkalis. And, it won't mildew, rot, crack or peel! Fine brass couplings fit standard outlets and *won't pull off!* You can get it in 3 *permanent* colors... Green, Red, Silver, with *structurally stronger* rib finish. SANDEE Garden Hose is nationally advertised, carries the Good Housekeeping Seal and a written guarantee. See it at your dealer's or write us.

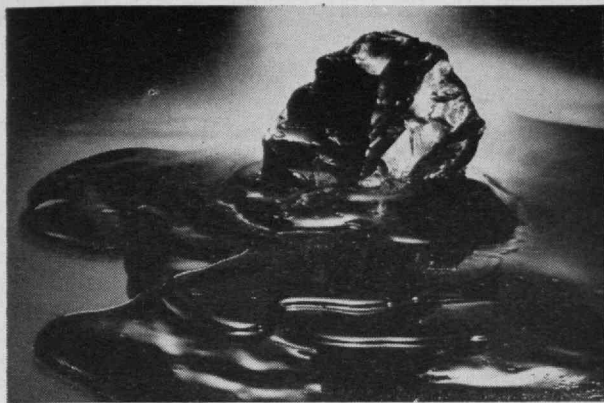
SALES REPRESENTATIVES IN 19 PRINCIPAL CITIES

# Sandee Manufacturing Company

5050 FOSTER AVENUE • CHICAGO, 30, ILL. U. S. A.

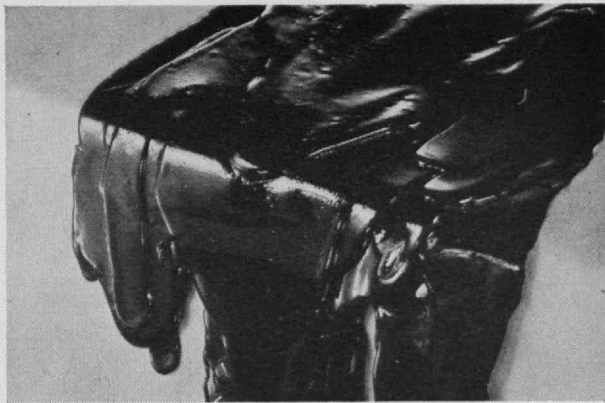
WORLD'S LARGEST CUSTOM EXTRUDERS OF PLASTICS





#### **LIQUID COAL** — the oil of the future

*The synthesis of oil from coal and natural gas promises an answer to the alarming problem posed by the rapid depletion of our petroleum reserves. C-E steam generating and heat transfer equipment is importantly identified with this program.*



#### **BLACK LIQUOR** is big business

*C-E Recovery Units save the Kraft paper industry millions of dollars annually by recovering chemicals from the spent liquor of the pulp-making process, and generating steam from the combustible ingredients of the liquor.*

## **Not such strange bedfellows**

#### **PULVERIZING** the materials of industry

*The principles of pulverization developed for C-E Pulverized Coal Systems are used for the efficient reduction to powder of a host of products for home and industry — from foods and cosmetics to plastics and metallic ores.*

#### **SOAKING WET TO BONE DRY** in split seconds

*C-E Flash Drying Systems make many water logged wastes into usable fuel, changing a disposal problem to a profitable operation. So, too, in the process industries many valuable products from which moisture must be removed are dried almost instantly.*



**T**o those of you who associate the C-E trade mark with boilers — for industry, for public utility stations, or for ships — the apparently unrelated processes pictured above may seem to be strange bedfellows.

But to many the C-E flame means some special field of activity like one of those here illustrated, or such others as domestic water heaters, pressure vessels for the process industries, or the drying and incineration of sewage sludge.

The point is that all these seemingly diverse activities have a common kinship in Combustion's primary field — the efficient generation and use of heat. And all benefit by more than 60 years of experience in this field symbolized by the C-E flame.

B-277

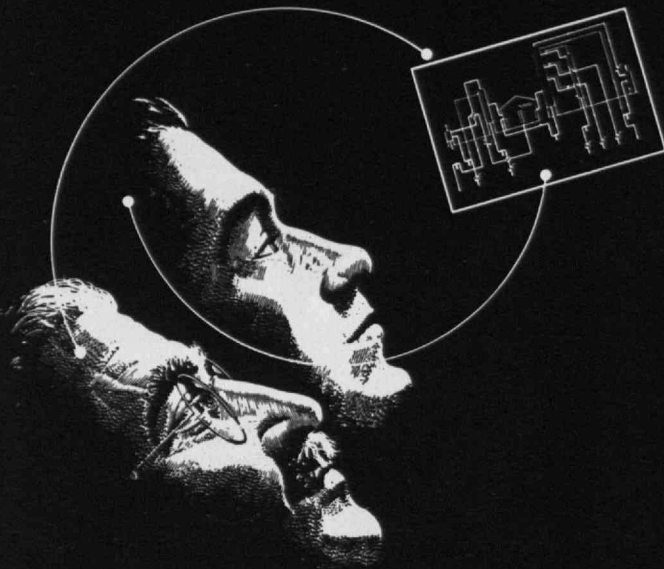


### **COMBUSTION ENGINEERING— SUPERHEATER, INC.**

A Merger of Combustion Engineering Company, Inc. and The Superheater Company

**200 Madison Avenue • New York 16, N. Y.**

**All types of Boilers • Furnaces • Pulverized Fuel Systems  
Stokers • Superheaters • Economizers • Air Heaters. Also,  
Pressure Vessels • Chemical Recovery Equipment • Sewage  
Incineration • Flash Drying Systems • Domestic Water Heaters**



# teamwork

Two types of teamwork play important roles in the engineering and construction of a plant: (1) Internal—within the contractor's own organization, (2) External—between contractor's and your personnel.

Internal teamwork shows up in records of successful accomplishment, a product of experience in working together on job after job. But the extent of external teamwork is more difficult to predict.

In carrying out its contracts, Lummus assumes a responsibility for giving you the benefit of all that your staff can contribute, as well as our own. We do not lean on them for ideas. But neither do we lean away from preferences they express or suggestions they offer. Your Lummus-built plant makes the most of the combined experience of your people and ours.

## teamwork in process development

In the development of improved methods of producing lubricating oil, Lummus has worked in close-knit cooperation with many leading oil companies. Lummus' exclusive pilot plant equipment for lube-oil process development has been employed to explore process alternatives suggested by these customers, supplementing their own research. More than 85 process units for solvent refining and dewaxing have resulted from this work—including the largest lube-oil plant in the world.

## teamwork in plant design

Lummus coordinated its engineering with the requirements and preferences of a leading chemical company—and laid the groundwork for an advanced type of ethylene plant. High yields are being obtained from a wide range of charge stocks. Operating costs are favorable, too.

## teamwork in plant construction

Construction in foreign countries and remote locations calls for a close relationship at the site between Lummus' personnel and oil company field forces. Assignment of men with a thorough knowledge of the region, its customs, laws and labor regulations, helps maintain this local cooperation. Records are maintained in accordance with client requirements for progress reports and cost control.

designs and builds with **teamwork**

Economy

Resourcefulness

Fulfillment

Perspective

Technique

### THE LUMMUS COMPANY

420 Lexington Avenue, New York 17, N. Y.

# LUMMUS

CHICAGO—600 South Michigan Avenue, Chicago 5, Ill.

HOUSTON—Mellie Esperson Bldg., Houston 2, Texas

The Lummus Company, Ltd.

525 Oxford St., London, W-1, England

Société Française des Techniques Lummus

39 Rue Cambon, Paris 1er, France

Compañía Anónima Venezolana Lummus

Edificio "Las Gradillas"

Esquina Las Gradillas, Caracas, Venezuela



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*The Cabot symbol is your guarantee of  
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**CABOT CARBON BLACKS...**

laboratory developed and controlled  
to fill specific needs in the rubber,  
ink, paint, varnish, lacquer, plastics,  
and paper industries.



*It Stands for*  
**CABOT CHARCOAL...**

prepared for use in the  
metallurgical, chemical,  
poultry, and tobacco curing  
industries.



*It Stands for*  
**CABOT PINE PRODUCTS...**

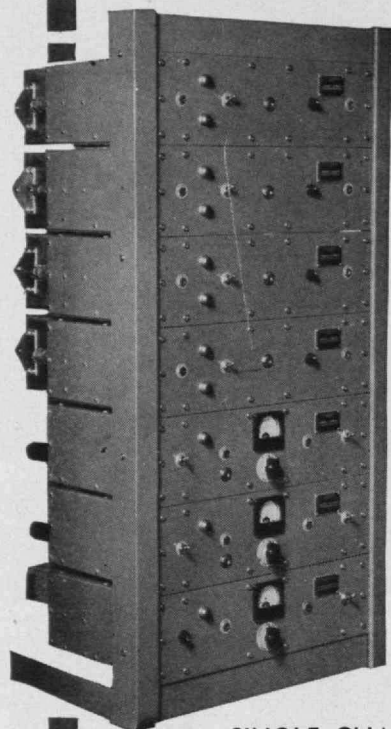
destructively distilled to meet  
technical requirements of the  
rubber, cordage, and paint industries.



## FSDR

### FREQUENCY SHIFT DIVERSITY RECEIVING EQUIPMENT

The National FSDR equipment has been designed to incorporate all the latest advances in automatic radio telegraphy. It is made expressly for use by communication companies, government services, shipping companies, airports, and others requiring the latest, most efficient equipment for receiving radio signals and converting them into electrical impulses which, in turn, key automatic terminal equipment. The National FSDR is now extensively used by the far-flung network of the Tropical Radio Telegraph Company and the Civil Aeronautics administration and similar departments of other countries. All report excellent results. The FSDR equipment consists of an FSR Receiver, FSL Limiter, and an FSK Keyer. Use of multiple FSRs and FSLs makes possible space diversity, frequency diversity, or both. Operation is extremely simple requiring only throwing of AC power switches. All units have a self-contained power supply designed to operate from 115 to 230 volts, 50/60 cycle supplies. Our engineers will be glad to recommend specific installations to suit your requirements.

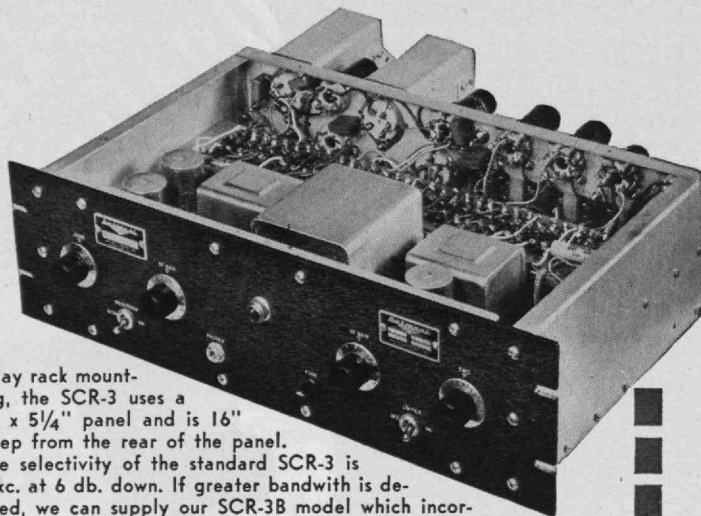


## SCR-3

### SINGLE CHANNEL RECEIVER

The SCR-3 is a single-channel superheterodyne receiver with a self-contained power supply which may be operated from either 115 or 230 volts 50/60 cycle AC supplies. It is designed to operate on frequencies from 1.8—25 mcs. Two tuned R. F. stages insure a favorable signal-to-image ratio varying from approximately 55 db at 25 mc. to 90 db at 1800 kc. Pre-tuned R. F. circuits, a crystal-controlled oscillator, carrier operated noise suppression (C.O.N.S.), and automatic volume control allow the operator to devote his full time to message handling. For C. W. reception a special low-drift voltage regulated oscillator assures proper tuning over long periods of time. Designed for standard

relay rack mounting, the SCR-3 uses a 19 x 5 1/4" panel and is 16" deep from the rear of the panel. The selectivity of the standard SCR-3 is 4 kc. at 6 db. down. If greater bandwidth is desired, we can supply our SCR-3B model which incorporates a variable I. F. having sharp, medium, and broad positions ranging from 4 to 8 kc. at 6 db down. The crystal-controlled oscillator employs an oven-type or standard crystal dependent upon the severity of operating conditions. The SCR-3 Receiver is fungus-proofed to retard the harmful effects of humidity characteristic of tropical climate.



## NAC

### NATIONAL VHF RECEIVER

The NAC Receiver has been designed to satisfy the needs of airlines, small private airports, and other interests requiring a compact tunable VHF rack mounted receiver. The NAC is a superheterodyne, superregenerative receiver utilizing a self-contained speaker. The receiver can be used separately or as a converter with any conventional superheterodyne tuning to 10.7 mcs. This, in addition to offering increased sensitivity, makes all features of the associated receiver usable on VHF. The standard model covers frequencies from 112-153 mcs. However, coil ranges covering specific frequencies between 27 and 250 mcs. are available on special order. The NAC operates from a National SPU-5886 power supply which is designed for 115/230 volt, 50/60 cycle supplies. If portable operation is desired, either the National 686S vibrator power unit (6 volt) can be supplied or a standard 6-volt battery and B batteries supplying 135 to 180 volts may be used.



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GENERAL CATALOG

Export Department  
invites foreign inquiries





## Without a Dollar of Capital Investment

**you can add 1500 machine tools to your plant**

Capital investment in seldom-to-be-used machine tools can be avoided if you use Taft-Peirce as a part-time-part of your own production lines. Here you will find more than 1500 machine tools of virtually every variety — and the highly skilled personnel to operate them. Whatever you need — from a single simple part to difficult and complex mechanisms in quantity lots — can be produced for you *right* and *right on schedule*.

Taft-Peirce supplements the production capacity of countless American industries. It can be your key to more uniform workloads, better utilization of your own equipment, and steadier employment.

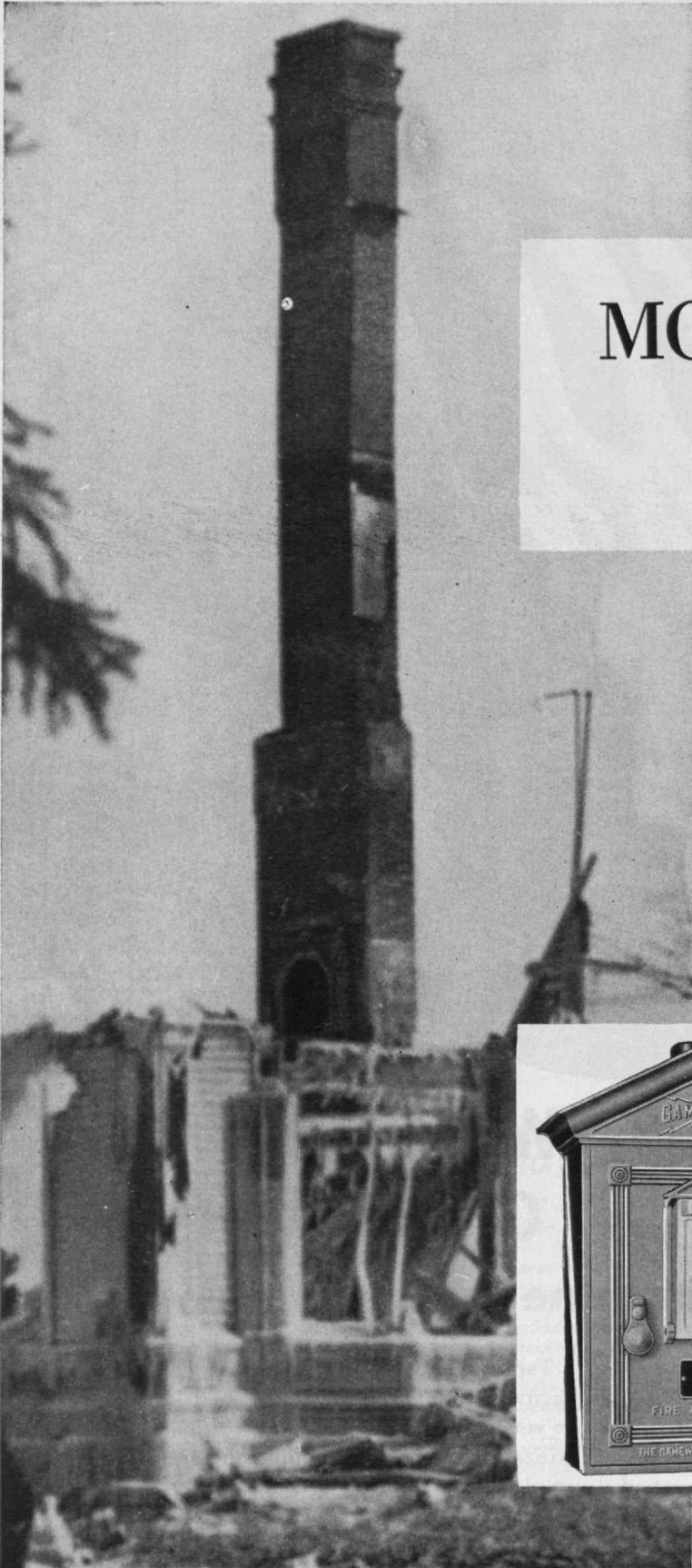
The complete story of Taft-Peirce facilities and experience is contained in the illustrated booklet "Take It To Taft-Peirce." Write to: The Taft-Peirce Manufacturing Company, Woonsocket, Rhode Island.



For Engineering, Tooling, Contract Manufacturing

**TAKE IT TO TAFT-PEIRCE**





# A MONUMENT TO NEGLECT

## Fire Destroys Property

When property is destroyed by Fire, the community and everyone in it loses — Yet the community may protect itself against loss of wealth — and income — by keeping the fire losses low. There will always be fires — the problem is to extinguish them while they are small.



## YOU Can Help

By urging your city government to provide adequate fire alarm box distribution. Prompt alarms reduce the fire loss and protect income.

F. B. Philbrick '18, *President and Gen. Mgr.*

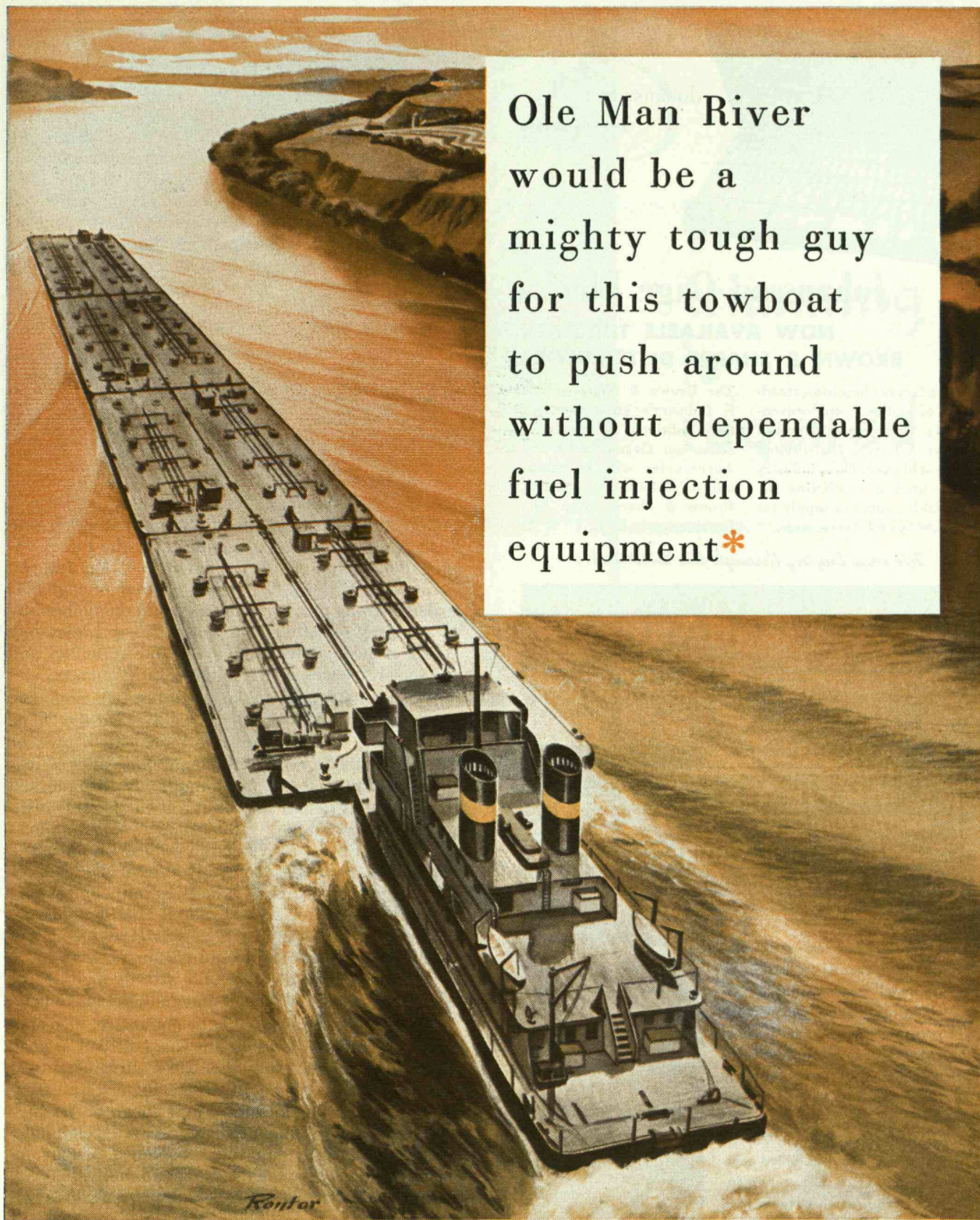
E. J. McCarthy '20, *General Sales Mgr.*

# THE GAMEWELL COMPANY

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Ole Man River  
would be a  
mighty tough guy  
for this towboat  
to push around  
without dependable  
fuel injection  
equipment\*



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**American Bosch**

**American Bosch Corp., Springfield 7, Mass.**

It takes premium equipment to stand the strain of continuous, night and day operation on the Mississippi and inland waterways. That's why so many companies that build engines for today's modern Diesel workboats rely on American Bosch, pioneer manufacturer of fuel injection equipment in America. They know they can always count on American Bosch when they need top-flight engineering assistance and high precision production.

• **Service the World Over**





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BROWN & SHARPE DISTRIBUTORS**

These famous precision standards of industry are conveniently accessible through Brown & Sharpe Distributors the world over. Thus, industry is assured a continuing dependable source of supply for JO-BLOCKS and Accessories.

The Brown & Sharpe name is industry's guarantee that the traditional precision of Johansson Gage Blocks and Accessories will be maintained without compromise. Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

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Artisan engineers and workmen are skilled in the techniques of metal working. Their combined knowledge and experience in engineering and building special equipment and machinery have been of value to many leading mechanical and process industries.

Write for a copy of "Process Equipment". For a qualified engineer to call to discuss your equipment requirements, telephone Waltham 5-6800 or write to: — James Donovan, '28, General Manager.

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EVAPORATORS  
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JACKETED KETTLES  
PIPE, PIPE COILS,  
AND BENDS  
REACTORS  
SPECIAL MACHINERY  
TANKS

**Artisan** METAL PRODUCTS, INC.

73 POND STREET, WALTHAM, (Boston 54) Mass.

## THE TABULAR VIEW

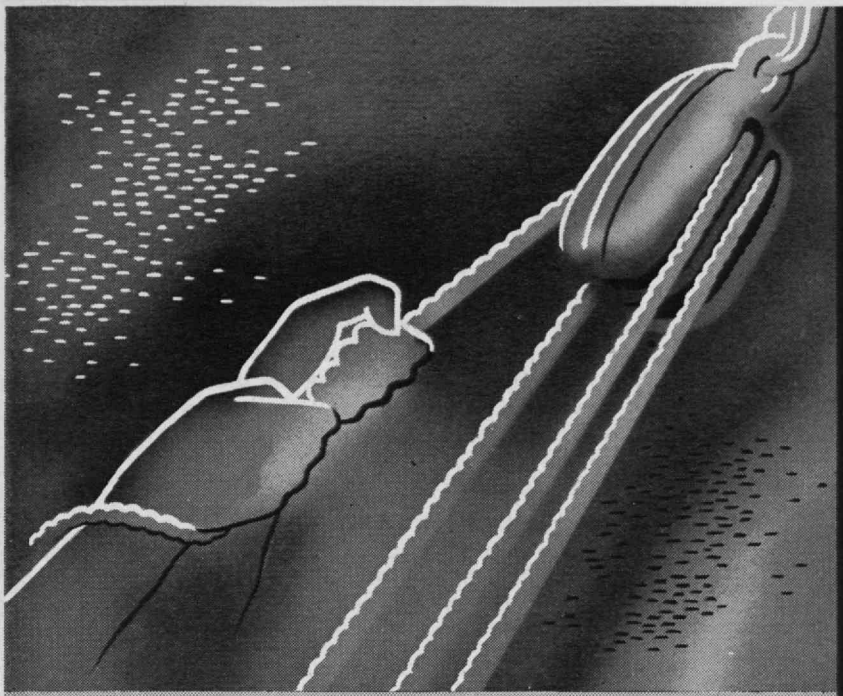
**Engineering in 1876.** — With Part I in the June issue laying the background for Part II by describing the national exuberance which characterized this nation at the time of the U.S. International Exposition of 1876, E. H. CAMERON, '13, concludes his article on the Centennial (page 557) by studying two exhibits, both of which superbly reflected the engineering achievements of their time. One is that of the Corps of Engineers of the U.S. Army; the other is the exhibit of the Massachusetts Institute of Technology. Mr. Cameron is head of the Technical Publications Division of Jackson and Moreland, and his studies of engineering progress in the post-Civil War period have appeared frequently in The Review.

**River of Life.** — The baccalaureate address to this year's graduates was delivered by the REVEREND CARL HEATH KOPF, well known to Bostonians as minister of the Mount Vernon Church in Boston and creator of the weekly program "From a Window on Beacon Street." Since last addressing the graduating class in 1945, Mr. Kopf has become minister of the First Congregational Church in Washington, D.C. His address, "This River Called Life," which appears on page 562, makes a strong plea for renunciation of the philosophy of "getting something for nothing" — a philosophy which is incidentally quite as invalid in politics and the social sciences as it is in the natural sciences.

**Aristotle Today.** — JAMES PHINNEY BAXTER, 3D, President of Williams College, historian for the Office of Scientific Research and Development, trustee of Radcliffe College, Phillips Academy, and other educational institutions, and, including in his distinguished career a brief detour as lecturer at the Lowell Institute, was selected to give the commencement address which The Review is pleased to publish on page 563. President Baxter is a strong advocate of the need for a truly broad and liberal education, although recognizing the need for specialization. His thoughts are emphasized by an amusing hypothetical account of the difficulties Aristotle would encounter were he to return to our present-day world with its high degree of specialization and lack of generally broad training.

**Doing the Impossible.** — PRESIDENT KILLIAN makes his initial bow before the Class of 1949, as head of M.I.T., in delivering the baccalaureate address "Doing the Impossible." It is The Review's pleasure to publish this significant address (page 567) which stresses a deep faith in a society free to develop independently, rather than the acceptance of governmental influences which may engulf individual advancement. As one of its former editors, The Review is proud to include Dr. Killian's address in this issue which concludes our present volume.

*The Review is not published during the summer months following July. This issue, therefore, concludes Volume 51. Number 1 of Volume 52 will be published on October 27 and dated November. Readers who bind their copies are reminded that if they possess nine issues of Volume 51, their files are complete. An index to the volume will be ready on September 30 and will be supplied post free upon request.*



# When sail trimming is required

No business can stay healthy without an occasional overhaul of its production set-up—particularly when a seller's market begins to quiver.

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## MAIL RETURNS

### Convocation Conversation

FROM THE RIGHT HONOURABLE WINSTON CHURCHILL:

Thank you so much for your letter and Technology Reviews which have given me interest and pleasure to receive.

*Westerham, Kent, England*

FROM HAROLD E. STASSEN:

Thank you very much for your kind letter of June 2 and for your kindness in sending me the extra copies of the May issue of The Review. I deeply appreciate your thoughtfulness and am very happy to have these extra copies.

*Philadelphia, Pa.*

FROM BERNARD M. BARUCH:

Thank you for your letter of June 1 and for the marked copy of the May issue of The Review. It was a great pleasure and honor to take part in the Convocation.

*New York 22, N. Y.*

FROM SENATOR RALPH E. FLANDERS:

Thank you for your letter of June 1 and for the May issue of The Review which you so kindly sent me.

*Washington, D. C.*

FROM NELSON A. ROCKEFELLER:

Thank you very much for your letter of the sixth and for your thoughtfulness in sending me the marked copy of The Review. The magazine will certainly serve as a memento of a most significant occasion.

*New York 20, N. Y.*

FROM ANDREY A. POTTER, '03:

Thank you for sending me a marked copy of The Review for May. My friends who read this copy felt that it was a splendid record of the contributions to the Mid-Century Convocation.

*Lafayette, Ind.*

FROM VANNEVAR BUSH, '16:

I thank you for your cordial letter of June 2. The May issue of The Review has reached me, and I regard it as a most interesting record of a distinguished affair.

*Washington 5, D. C.*

how to get  
more out of  
**HACKSAWS AND  
BAND SAWS**

#### USE THE STARRETT HACKSAW AND BAND SAW BOOK

Choose the right hacksaw or band saw for any cutting job from this big new Starrett Hacksaw and Band Saw Book just off the press.



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Handy slide rule chart instantly gives complete information for cutting any material by hacksaw or band saw.

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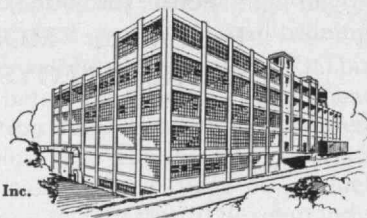


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**INDUSTRIAL CONSTRUCTION**

ALFRED T. GLASSETT, '20, Vice President

# *New Fields of Research and Achievement* ... FROM THE AIR

★ ★ ★

## *Rare Gases Now Available in Quantity Offer Challenging Subject for Study*

Among the least known of the elements have been the rare gases—Krypton and Xenon. Occurring in the atmosphere in concentration of one part per million for Krypton, and one part per twelve million for Xenon, their very scarcity gave them the status of “scientific curiosities” for a long time.

But now, these gases are available in quantity in refined, compressed form. As these gases assume the different role of “new” materials, their individual physical and electrical properties are finding interesting uses.

The increased efficiency of hot cathode (fluorescent) lights is a direct result of using Krypton as the gas filler. The brightest light ever made by man is produced by an electrical discharge through a column of Krypton... these lights are used to penetrate fog at airports.

Xenon is replacing mercury vapor in industrial (thyatron) tubes, to avoid low temperature condensation troubles. It is Xenon that makes practical the “repeater” (gas discharge) photographic flash lamp—the low resistance and good spectral range of the gas both being important. In the fast-growing field of atomic energy, the rare gases become increasingly important. The use of such gases in Geiger Mueller counter tubes is well familiar.

Chemists and physicists on many types of projects will want to study the possible value of these gases in their fields. Others may desire to work with the rare gases as such, contributing to further information in this expanding subject. Graduate students especially may find rare gases a fascinating, challenging, and wide open field for doctoral thesis.

In whatever connection, scientists who may want more information on Krypton, Xenon, Argon, etc., are invited to write us fully. Please write Dept. LAP, Room 1502, 30 East 42nd St., New York 17, N. Y.

## **UNION CARBIDE** **AND CARBON CORPORATION**

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NATIONAL Carbons • EVEREADY Flashlights and Batteries • ACHESON Electrodes • PRESTONE and TREK Anti-Freezes



Every road is full of punches. Even smooth concrete gives you a succession of light jabs. Poor roads sock hard enough to make your springs rattle.

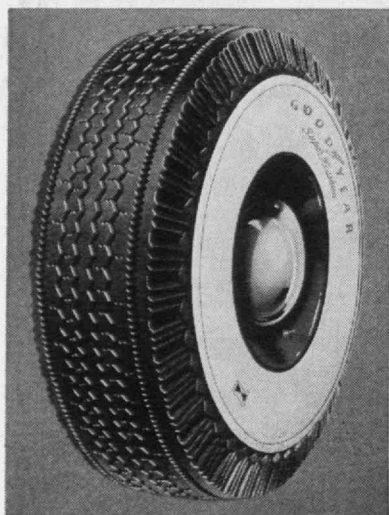
The Super-Cushion, Goodyear's new *kind* of tire, is bigger, *softer*. It actually rolls with the punch, absorbs more of the blow, gives amazingly *smoother* ride.

And Super-Cushions are superior to conventional tires on 12 important points—including *mileage*!

Super-Cushions will fit your present wheels. Your Goodyear dealer will buy all the unused mileage in your present tires—so trade 'em in on a set of Super-Cushions NOW!

# EVERYTHING A TIRE CAN DO...

## *Super* *cushion* DOES BETTER!



Here's how the Super-Cushion outperforms conventional tires:

- |                      |                          |                       |
|----------------------|--------------------------|-----------------------|
| 1. Softer Ride!      | 6. Easier Steering!      | 11. More Car Economy! |
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| 5. Greater Traction! | 10. Fewer Rattles!       | MILEAGE, TOO!         |

# GOOD YEAR

MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND





B. Dudley, '35

# THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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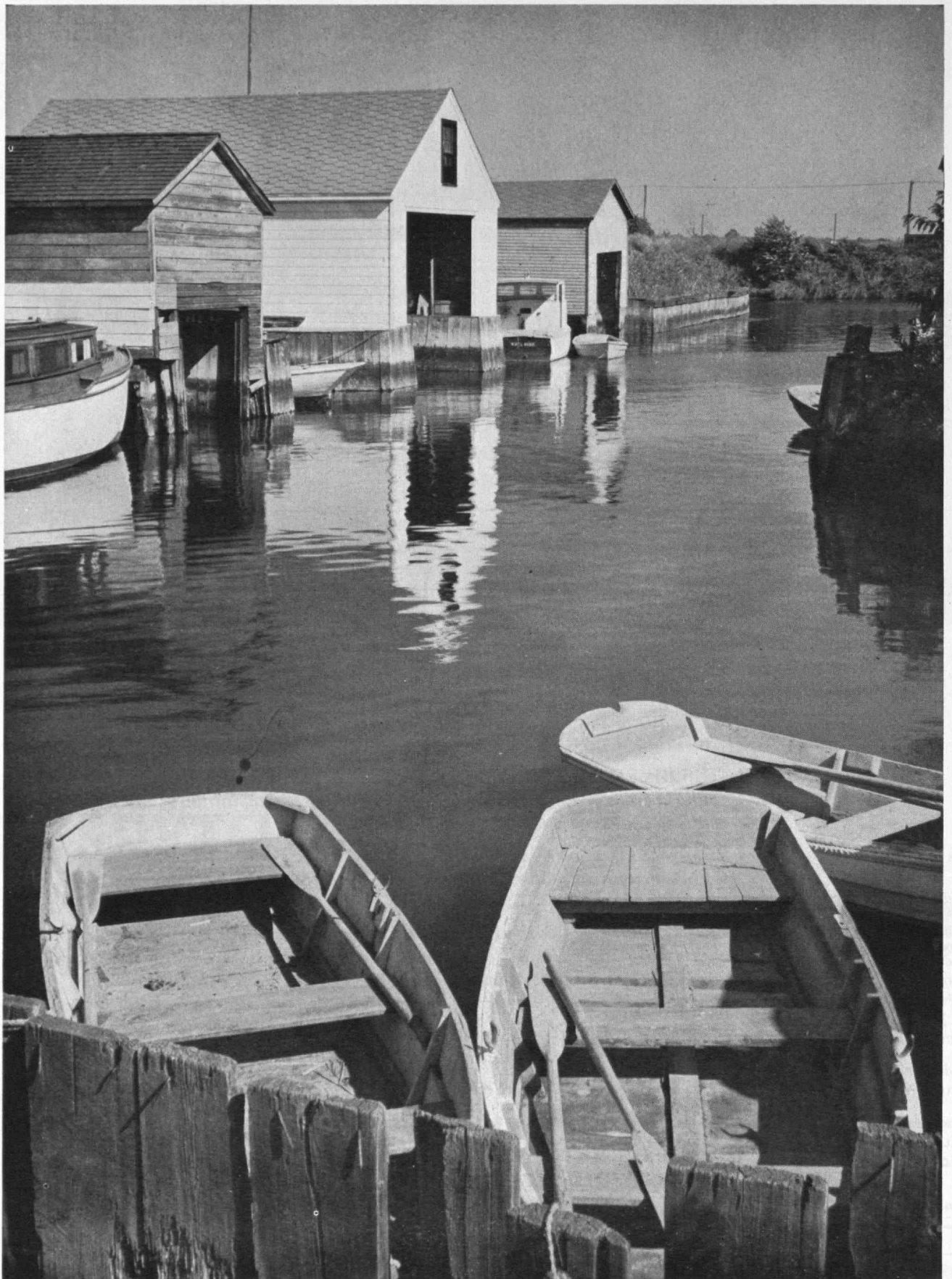
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*Gustav Anderson from A. Devaney, Inc.*

*Invitation to Relaxation*

# THE TECHNOLOGY REVIEW

Vol. 51, No. 9



July, 1949

## The Trend of Affairs

### First Rank

THAT the Institute continues its leadership in training men to assume foremost positions in the engineering field is once more strikingly illustrated in the article "College Antecedents of Successful Engineers" by D. B. Prentice which appeared in the May, 1949, issue of *Mechanical Engineering*. In a continuation of studies of the educational background of successful engineers, as represented by their listing in *Who's Who in Engineering*, Dr. Prentice supplements data given in earlier studies of the 1931 and 1937 editions by including a recent study of the 1948 edition of this well-known biographical reference work of leaders in the broad field of engineering.

The study is limited to graduates of colleges in the United States and Canada, and bachelor's degrees controlled the assignment of individuals to institutions of learning. In summarizing the results of the present study, Dr. Prentice says: "The Massachusetts Institute of Technology again heads the list in total alumni included, with Cornell second. Alumni of these two private, or endowed, colleges furnish one-eighth of all the engineers in the 1948 volume who were graduated from colleges in Canada and the United States."

The accompanying table, extracted from the article, includes only the 25 ranking listings according to the 1948 study. The comparative rank of educational institutions for the 1931 and 1937 studies has been added in The Review's listing, although this data does not appear in the table prepared by Dr. Prentice. It is perhaps significant that the comparative listings of the top-ranking institutions have not changed appreciably in almost two decades.

Other data in the *Mechanical Engineering* article show that of the 22,475 Alumni who have received bachelor's degrees from Technology, 933 are listed in the current edition of *Who's Who in Engineering*. Thus, 4.15 per cent of the Institute's graduates have

become sufficiently outstanding in engineering to merit listing in this directory of prominent persons. Of the schools of engineering and technology, Rose Polytechnic Institute and Worcester Polytechnic Institute follow, in order, with more than 3.5 per cent of their Alumni listed among the men of distinction in engineering.

COLLEGE ALUMNI LISTED IN  
*WHO'S WHO IN ENGINEERING*

Name of Educational Institution	Number of Alumni Listed			Rank		
	1948	1937	1931	1948	1937	1931
M.I.T.	933	761	664	1	1	1
Cornell	667	611	562	2	2	2
Michigan	585	460	385	3	3	3
Illinois	450	364	295	4	4	4
Purdue	384	309	254	5	5	8
Wisconsin	357	305	269	6	6	6
California	299	229	207	7	10	9
Ohio State	299	254	192	7	9	11
Columbia	281	292	281	9	7	5
Yale	270	270	256	10	8	7
Minnesota	269	182	157	11	13	14
Harvard	234	200	190	12	11	12
Kansas	219	124	119	13	20	20
Pennsylvania	213	197	179	14	12	13
Iowa State	211	171	144	15	15	17
Rensselaer	194	125	120	16	19	19
Stanford	188	132	145	17	18	15
Penn State	181	147	110	18	16	21
Lehigh	174	175	201	19	14	10
Colorado	160	92	80	20	27	28
Washington	155	107	82	21	23	26
Worcester	155	147	145	21	16	15
Stevens	150	122	122	23	21	18
Case	135	105	85	24	24	25
Nebraska	132	111	93	25	22	23



## Progress in Radiosondes

THE letters AN-AMT-3 are not symbols representing an advertising slogan for a brand of cigarettes, but the Army's designation for a new type of radiosonde for meteorological work.

A radiosonde, as is well known even to most non-meteorologists, is a compact set of three sensing instruments — one for temperature, one for air pressure, and one for humidity — which are connected with a small battery-powered radio transmitter in such a way that the readings of the instruments can be received and evaluated by a ground station. The radiosonde itself was preceded by two other types of instrument sets; in fact, it combines the desirable features of both of these two types.

The first of them was a balloon-borne aggregate, consisting of an aneroid capsule for measuring pressure, a bimetallic strip for measuring temperature, and a hair hygrometer for measuring relative humidity. Each of the three had its own recording mechanism which traced a line on an unrolling paper strip. Such balloon-borne sets had to be recovered in order to yield the information they had gathered. The rate of loss was high, and even if found, the information was valuable only for general meteorological research. It inevitably came too late to be useful for the intended work of weather forecasting.

The other type was the unmanned ground station. The readings of the instruments were transmitted electrically through a cable, and since the batteries could be located at the receiving end, the need for servicing of the station itself was kept at a minimum. The two methods of transmitting the information greatly influenced later developments. One was named after the Dutch instrument maker, Olland of Utrecht, who invented it in 1877. It can best be explained by referring to a modern clock of the type which has a so-called "sweep hand" for seconds, mounted on the same shaft as the other two hands. If the hour and minute hand indicate, for example, temperature and pressure, and if the sweep hand in passing them makes contact and sends a signal every time, an indication of their positions is easily transmitted. To make doubly sure that no mistake was made, Olland also placed a contact at the "12," thus providing a fixed reference signal. The other method had been invented at about the same time by the Italian, Professor Cerebotani. It worked with a drum made of hard rubber into which two contact strips of metal had been inserted, forming a V. A contact arm moved around the cylinder: if it was at the bottom, it sent only one signal; if at the very top, it sent two signals.

The problem was, or seemed to be, to combine either the Olland or the Cerebotani principle with the instruments of the balloon-borne set and to do the transmitting by radio. The first to find a workable solution appears to be Moltchanoff, but since he worked primarily for the German Zeppelinbau, his instrument is known under its German name of *Kammgerät* or "*comb apparatus*," derived from the comblike arrangement of the contact points.

During the years from 1923 to 1938 at least 20 different types of radiosondes were designed and tested; some of them were even manufactured in small quan-

ties. The Olland principle was quickly abandoned because of the need for a very accurate, and therefore expensive, clockwork. The Cerebotani principle could be made to work even with a cheap clock because one could also transmit an indication of the revolutions of the drum which could serve to correct deviations of the clock. Especially the Frenchman, R. Bureau, had fine results with such a construction. The type developed by the Finnish scientist, Vilho Väisälä, was even superior, but since it transmitted the readings by deviations of the wavelength of the carrier wave, it could not be introduced in countries where wavelengths are strictly allocated.

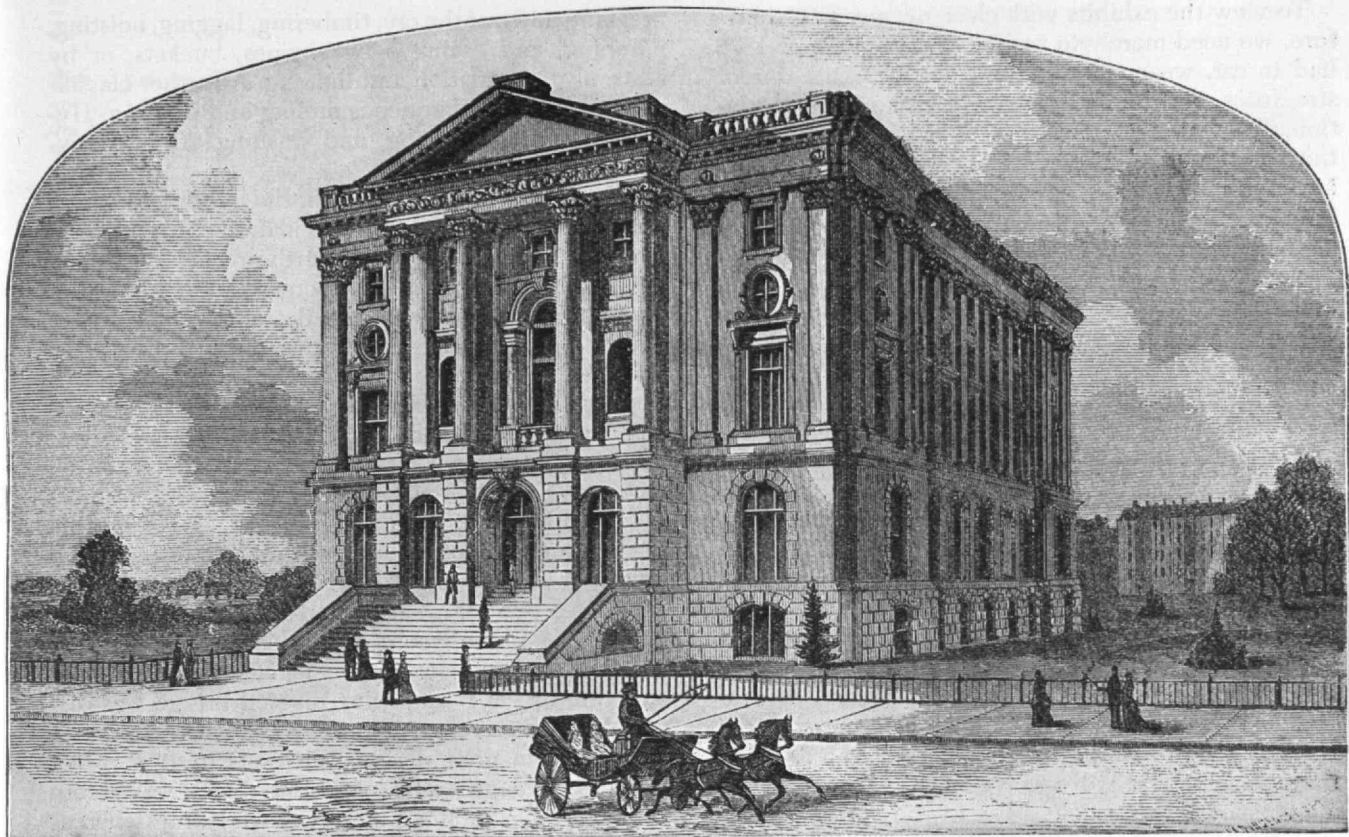
The United States adopted a type originally developed in the Bureau of Standards by Harry Diamond, '22,\* Wilbur S. Hinman, Jr., and Francis W. Dunmore which transmitted the information over a modulated carrier wave. This type was put into service in 1938 at the Naval Air Station, Anacostia, D.C., during the following year in 12 weather stations, and one year later in 45 stations. Not only was the method of transmission novel, the device for measuring temperature was new, too. It was no longer a bimetallic strip but a fine-bore glass tube filled with an electrolyte which changed resistance with temperature. A few years later this electrolyte-filled glass tube was replaced in turn by a semiconductor of metal oxides which have characteristics similar to the electrolyte but are mechanically superior to the glass tube.

And in 1944 even the hair — "natural blond, unbleached, untreated with chemicals, at least 36 centimeters long" — had to give way to electrochemistry; it was replaced by an electrolyte-covered strip of transparent plastic. Except for the aneroid capsule which supplied the pressure reading, all measurements had become direct electrical measurements.

But in the AN-AMT-3 everything is mechanical again! Human hair is used for the humidity element, the customary aneroid capsule for the pressure element, and a bimetallic strip for temperature. Each one produces mechanical movements which operate three pickup arms. The three arms all reach over to the code disk which looks like a very small record, and is even made by a firm that specializes in musical recordings. One quadrant of this disk is raised above the other three and is equipped with 211 concentric grooves. Each groove carries two letters in the international Morse code. Groove number 107, for example, carries the letters NM. If one of the three arms gets into groove number 107, the signal NM will be broadcast; the operator's charts tell him what the letters NM mean in terms of instrument readings. If the letters NM are being caused by the humidity arm, it means a relative humidity of 48 per cent.

Naturally one will ask, at that point, how the operator can tell that these letters NM were caused by the humidity instrument. How does he know that it was not the pressure arm or the temperature arm? The answer is that if this should be the first, or even the second, set of letters he hears, he doesn't know. At the third set of letters he does know, because the sequence of sending is coupled with an interruption: it is pressure, temperature, humidity, pause, and so on, as long as the batteries last.

\* Deceased.



*At the time of the Centennial Exposition of 1876, M.I.T. had been chartered for 15 years, and offered 10 different courses of instruction. Then students attended classes in the original Rogers Building shown above.*

## THE CENTENNIAL OF 1876— High Tide of Confidence

*Exhibits of the Corps of Engineers and of M.I.T.  
Portrayed the Latest in Engineering and in  
Engineering Education Seven Decades Ago*

**By E. H. CAMERON**

### PART II

THE roster of exhibitors at the Centennial Exposition of 1876 is replete with names of industrial firms who are still in business. As we scan the catalogue of devices displayed, we are tempted to exclaim that there is nothing new under the sun, and forget that most of these devices were but crude prototypes of their modern counterparts. To maintain a true perspective as we study the exhibits, it is therefore necessary to recapture the atmosphere of the times, and, for this, Carl Sandburg has provided an apt account of two incidents in the lives of American presidents which occurred about a decade before the Exposition opened its gates. Writing of a speech which Abraham Lincoln gave from the White House

balcony in 1865, Sandburg<sup>7</sup> says: "He began to read his speech holding a candle in his left hand and the manuscript in his right." At Lincoln's funeral a few days later, "at 15th Street, one of the horses of President Johnson's carriage began rearing for a runaway, and the President and his companion, Preston King, alighted and took seats in another carriage." The story of these two incidents is of particular value because it emphasizes the limited common comforts of the day, even for those in exalted positions, thereby providing a reasonably qualitative measure of the status of American living in the year 1876.

<sup>7</sup> Abraham Lincoln, *The War Years* (New York: Harcourt, Brace and Company, 1939), 4 vols., \$20.00.



To view the exhibits with clear perspective, therefore, we need merely to realize that the man of 1876 had to eat, wear clothing, and live in weatherproof structures, and he had to have means of transportation, then, as we do now. The 1876 fashion of fulfilling these cardinal requirements of life were exhibited. Most of the displays would now appear quite old-fashioned; some would look quite familiar; many novelties would be recognized as prototypes of today's common devices to make life easier; and there were many freaks.

In this article, the review of the exhibits must be limited to those of interest to engineers. While the French carriage, treadmill-propelled by two dogs, might intrigue the automotive engineer slightly, the cathedral-like Swedish porcelain stove draw a superior smile from the heating engineer, and the bow-facing rowing gear cause the marine architect to take notice, there is no point in examining these rather odd exhibits. The exhibits in the fields of mining, steel manufacture, transportation, and power have an 1876-1949 comparative significance, however, and are worth describing. Two exhibits, especially, serve to summarize the 1876 status in the general field of engineering: that of the Corps of Engineers of the United States Army, and the one of M.I.T.—and these deserve and will receive closer examination in a later part of this article.

### Survey of Exhibits

Pleasantly large profits for small mining investments undoubtedly financed the glorious Centennial excursions of many. Poorer people would have one common interest with those who had become rich overnight. They would want to learn more about the apparently limitless deposits of gold, silver, zinc, lead, copper, and coal of the Great West. Thus, the Mining and Metallurgy exhibit topped the list in the classification of the "Official Catalog of the U.S. International Exhibit of 1876." Starting with surface and underground surveys, the catalog lists exhibits on drainage, sinking and lining shafts, tunneling, stoping, and

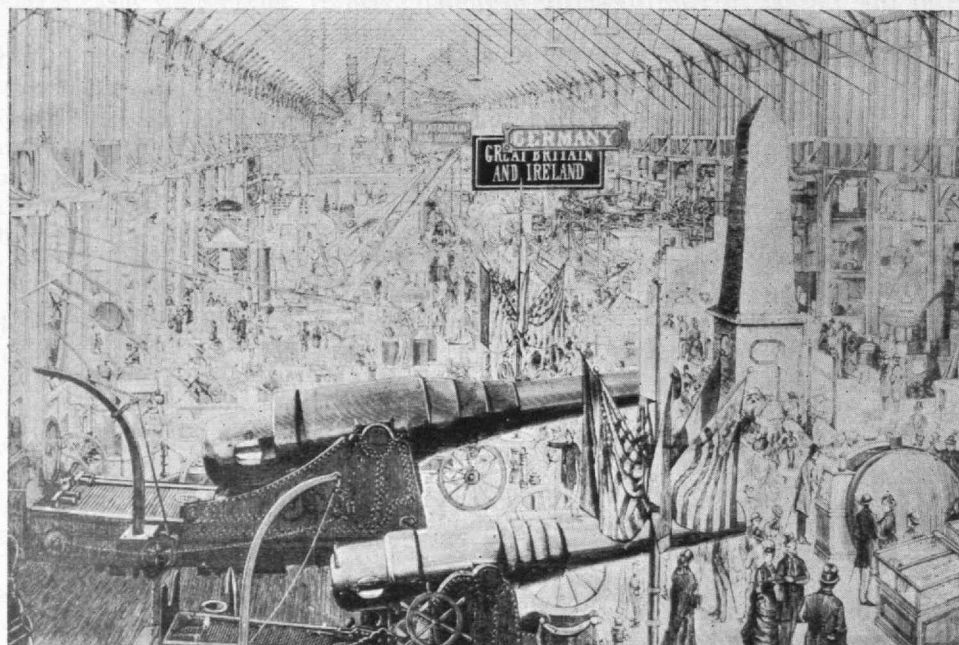
breaking down of the ore, timbering, lagging, hoisting, pumping, and drainage by engines, buckets, or by adits; also, ventilation and lighting. A further classification includes subaqueous mining and blasting. Hydraulic mining, sluicing, and washing are also covered in the catalog.

Competing in interest with the mining displays were the new methods for the manufacture of steel: the Bessemer and the open-hearth processes. Already the production of steel had increased severalfold because of the economy of the Bessemer process over former methods. The infant open-hearth process had still greater promise, and the Centennial booklet of Cooper Hewitt and Company claimed that this company was sole United States agent for this process. The various subsidiaries of this company included rolling mills, wire mills, a chain works, and a horse-shoe shop. There were exhibits by The Keystone Bridge Company of the methods used in forming and uniting the steel tubes of the Eads Bridge at St. Louis, completed two years earlier and still serving as an important link in the system of American transportation.

A nickel-plated working model of the 472-foot-long structure of the Raritan Bay pivoted bridge was displayed. Like the contemporary Keokuk pivot span, it differed from prior design. "Previous to 1860, pivot bridges were generally constructed of two disconnected spans, sustained by guys," we learn,<sup>8</sup> whereas the Raritan and Keokuk bridges were self-supporting when revolved on the pivot center. Light and heavy cast- and wrought-iron work for buildings was listed.

Coincident with the practical starts in the new steel processes, and due to be accelerated by the cheaper steels, were the improved modes of transportation. Of course the half-century-old steam railroad industry led at the Exposition. Pioneer research in other fields was under way. Indeed Serpollet's steam boiler with a pressure of 1,000 pounds per square inch, appeared finally to have solved the problem of automotive design, albeit Otto would soon patent his four-cycle

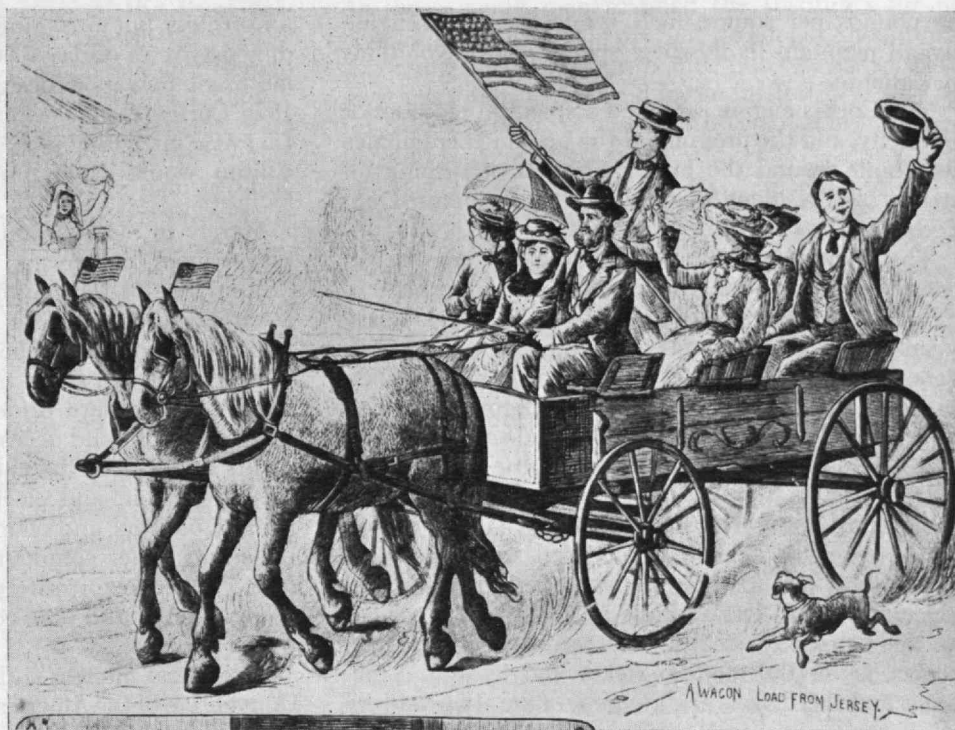
<sup>8</sup> Captain D. P. Heap, The Engineer Department, U.S. Army at the International Exhibition, 1876.



*The great Krupp gun dominates the show, as some of the other exhibitors have dominated their respective industries in the ensuing years. A few are: H. W. Johns (Johns Manville), Baldwin Locomotive, Union Iron, Sellers, American Bridge, Pratt and Whitney, Brown and Sharpe, Westinghouse Brake, Hartford Steam Boiler, Jones and Laughlin, Morse Twist Drill, Fairbanks Scales, Tagliabue Instruments, Stanley rules, Studebaker Bros., B. F. Sturtevant, Knabe pianos, Hallet and Davis pianos, Gilbert and Barker, Niagara Steam Pump, Revere Copper, J. G. Brill, Pullman, and Babcock and Wilcox.*

This patriotically happy family presumably checked the wagon at one of the carriage stands, although they would need to be early on Pennsylvania Day, when one-quarter million visitors crowded the Exposition. Perhaps one of the boys would have to leave the show, to feed the horses at noon, or perhaps his father would tip the attendant to tie on the nosebags. In any event, he would be a busy carriage-stand attendant: horses to clean up after; horses to blanket during the cold fall days; nervous horses to keep from tearing away from hitching posts during summer thunderstorms; sneak thieves to watch.

Harper's Weekly



gas engine, which he had conceived nine years before the Exposition. Evidence exists of pioneer trials of electric locomotives, motorcycles, and cable cars. Aside from the steam locomotive, however, it was the horse who moved people and goods from place to place in the year 1876. The prime mover for short-radius vehicles was the horse. Accordingly, the Exposition provided ample space for carriages, buggies, phaetons, light wagons, omnibuses, and farm vehicles of various types. There were intriguing accessories: horsewhips, sleigh bells, shiny harness, springs, rubber-covered carriage steps, and spokes, felloes, wheels, shafts, and plough handles of hickory or oak. Of the millions who drove to the Exposition behind Old Dobbin, many would enhance their comfort, and his, on future journeys by the purchase of these fine accessories. Southerners would be sure to visit the exhibit of the S. S. Putnam Company of Neponset, Mass. They would recall the hundreds of boxes of Putnam horseshoe nails captured in Virginia from General Pope. Many good Confederate horses would otherwise have gone unshod but for this godsend of the "world's only hot-drawn, hammer-pointed horseshoe nails"—as described in the official catalog of the Exposition.

Of more spectacular interest, however, were the railroad exhibits. Early visitors might not have heard of the plans for the trial transcontinental run, but those who came in midsummer would learn of this still impressive performance of the relay of trains on a run from New York to San Francisco. With Engine 573 (total wheel base of 44 feet, five inches), making the first leg of this trip, the total time for the transcontinental run was 84 hours!

The Baldwin Locomotive Works presented, or perhaps sold, a handsome, bound book which contained line drawings of their several current locomotives. The tables of performance data in this volume indicated that trains of the period had a coal consumption of 34 to 46 pounds of coal per engine-mile; and

proudly proclaimed<sup>9</sup> that the eight-car *Atlantic Express* made its scheduled run at 25 miles per hour. Contemporary designs of nearly all present-day track fastenings and rolling stock equipment were shown; there were paper car wheels with steel rims, chilled cast-iron wheels, and a cast-iron steel-tired wheel with a record of having run 460,000 miles. Woodbury's elastic wheel had rubber interposed between the metal parts. Passenger car heaters were listed; also, ventilators, compensating axles, automatic car couplers, and air brakes (the Westinghouse patent was but seven years old). The splendiferous palace sleeping car would be sure to tempt one to view the conquered Great West through its windows, now that the Pacific Railroad had had seven years of safe operation.

Engineers responsible for the design and manufacture of the power system of Machinery Hall were called upon to deliver sufficient power to turn the myriad operating machines in this one-quarter-mile-long building of the Exposition. Happily, the authorities would scan the drawings of the prime mover; the twin engine proposed by Mr. Corliss. It would be big and the very epitome of strength. This behemoth would top a three-story building. Working "nominally," it would do the work of 1,500 horses, and when called upon to exert itself to capacity, could produce 2,500 horsepower. Awed reporters would speak of the miles of shafting that it would drive. Like all colossal beasts, it was ponderous and slow in its movements, but it would be "modern" with the latest 1876 design of air pumps and condensing apparatus. It would conserve its strength like the economical giant it was. When the load dropped off, the Corliss governor would reduce the call for steam by lowering to 25 pounds per square inch the nominal pressure of

<sup>9</sup> The *Atlantic* of the Baltimore and Ohio, in active service from 1832 to 1893, made 80 miles per ton of coal, as well as rendering good service by hauling Federal troops in the Civil War, according to *Life* magazine (September 27, 1948).

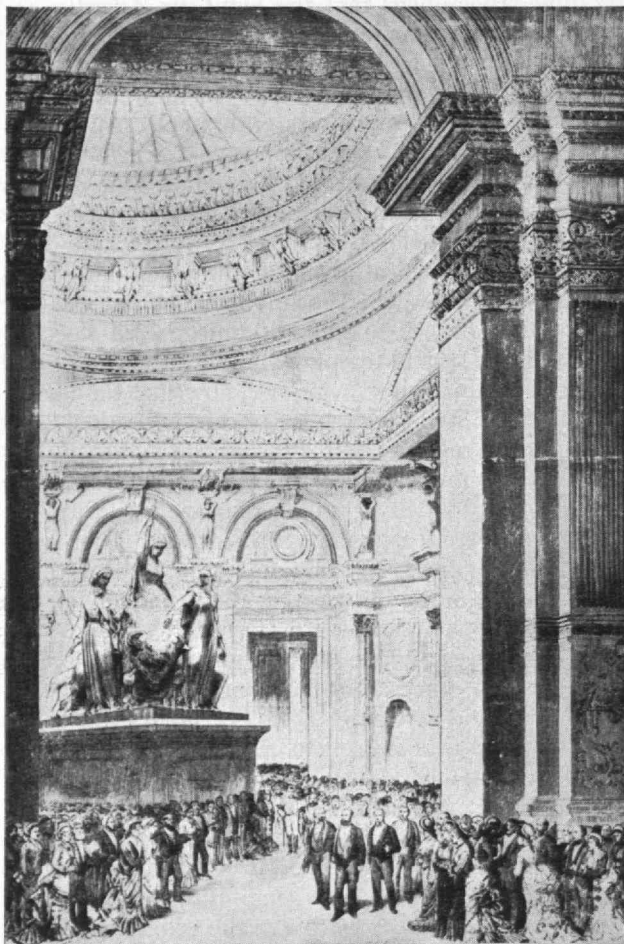


80 pounds per square inch, while the huge engine would maintain its flywheel speed of 36 revolutions per minute.

The Corliss engine provided a splendid medium of publicity, and the program of the opening ceremonies was built around the brief operation of turning on steam by President Grant and the Emperor Dom Pedro, as already recorded in Part I.

That they stood on the threshold of the era of electric power generation, distribution, and transmission, a few foresighted engineers probably realized. Three years earlier (1873) it was discovered that an electric generator would operate as an electric motor when supplied with electric power. This discovery opened up the possibility of transmission of electrical power. Three years later (1879) the first electric power plant in the United States would be established in San Francisco<sup>10</sup> and three years later still (1882) Edison would open his Pearl Street central station in New York City. Thereupon began the modern trend toward prime movers of less and less bulk per unit of power as their capacity steadily increased, thanks to the economies of the modern steam and hydraulic turbines and the driven electric generators. It would be

<sup>10</sup> According to an advertisement of the Pacific Gas and Electric Company in the *Boston Traveler* of April 12, 1949.



*Leslie's Historical Register*

A military genius, General Grant, in the foreground, has become the symbol of the era of baroque aesthetic tastes. The classic architecture of this scene, as well as the art exhibits, was artistically above par compared to the other buildings and exhibits. Masterpieces of art were shown by Alma-Tadema, Millet, and others; and even by Rog rs, whose stilted groups are now sought by collectors.

a worthless, but intriguing, speculation to compute the dimensions of today's 80,000-kilovolt-ampere behemoths of power, if designed along the lines of the 1876 Corliss engine which thrilled our grandfathers. Likewise intriguing is the concept of what Corliss and Edison would have produced with today's design facilities.

Merely to maintain our perspective, as we talk of power units of then and now, let us view the small exhibit case of the Smithsonian Institution, wherein is displayed a half-scale model of a 150-horsepower boiler exhibited by Babcock and Wilcox, and dated 1876, the original still a treasured relic. It should also temper our modern pride to learn the depths of the roots of the myriad accessories of our modern power plants as listed in the catalog of the Exposition; the steam, gas, air, and electromagnetic engines; steam gauges, blowers, and seamless tubes; samples of boiler scale and boiler compounds; governing devices; the little giant injector; safety valves; hot- and cold-feed pumps; boiler and pipe covering; low- and high-level water indicators.

Of general interest is the record of the 8th Annual Convention of the American Society of Civil Engineers held in Judges' Hall. Those who attended this meeting would hear the young hydraulic engineer, Clemens Herschel, speak on the "Waves of Translation," and structural engineers could listen to his discussion of another paper on the "Theory of Continuous Girders." General Theodore G. Ellis would predict that "the days of steam and of iron and steel are numbered, and that in the future solar heat will be the motor and aluminum the metal used in their places."

If he likes, the modern engineer may laugh at the exhibits for windmills, bugproof bedspring beds, ice caskets for preserving the dead, and popcorn apparatus of the good year 1876. But may not some of our ideas and present appliances seem equally strange three-quarters of a century hence?

### **Army Engineers' Exhibit**

The impressive exhibit of the Corps of Engineers of the United States Army is significant on two points. First of all, it broke down the field of engineering into two classifications, labeling all engineering except the military as "civil" in the year 1876. Its second contribution was to bring together such information as would present an accurate measure of the part engineers were playing in the building of America.

Evidence of the wide scope of the activities of the Corps of Engineers, which would celebrate its own 100th birthday in three years, was revealed by maps, models, photographs, or drawings. These exhibits included a model of Provincetown and the tip of Cape Cod, illustrations of breakwaters, various harbor and river improvements, lighthouses, steam dredges and snag boats, meteorological and surveying instruments, a steam-drilling scow, a sounding machine, and an electromagnetic chronograph.

Many publications are listed, dealing with such subjects as bitumen, resistance of piles, arch thrusts, compressive values of various woods and stones, and the effect of sea water on iron pile shafts.

Listed with the Army exhibits, but perhaps displayed elsewhere, were the foreign engineering ex-

hibits. France displayed drawings of the Brest cof-dam and several lighthouses. General Garibaldi's map "showing Amelioration of the Tiber and Roman Campagna" was in the exhibit of Italy. The Netherlands had a splendidly comprehensive, illustrated account of dikes and other methods of coast protection showing tide locks and explaining the plan to drain parts of the Zuider Zee to afford protection of river banks by fascine beds, fences, or fagots of osier.

An intriguing exhibit was that of "millmade concrete" apparatus, used at Portland, Maine, and elsewhere. This cubical wooden box, four feet on a side, with a six-horsepower engine drive, would mix 100 cubic yards of concrete in one 10-hour day.

By today's knowledge, both semifallacious and soundly correct conclusions appear in the treatise of Brevet Major General Quincy A. Gillmore, entitled "Portland and other Cements and the Artificial Stone." The Corps of Engineers was represented at tests of cements with samples from Germany, England, the United States, Canada, France, the Netherlands, and Russia. From the records, tensile strength appears to have varied from 22 to 269 pounds per square inch; in compression, failures occurred from stresses of from 122 to 1,439 pounds per square inch. General Gillmore highly commends artificial stone made from hydraulic cements. His definition of Portland cement closely resembles the definition given 35 years later in the 1911 edition of the *American Civil Engineers' Pocket Book* by Merriman.

Very modern indeed appear the cuts of hoisting machinery, dredging equipment, and the Weston differential pulley block of from one- to 10-ton capacity. While the pulsometer looks modern, other pumping apparatus appears elementary, by today's designs.

The subsequent great advance in military engineering is revealed by the exhibits classified as Military Engineering. The fortifications described could serve for the bastions and citadel of old Quebec, but Krupp of Essen, Germany, and also the nations of Russia, Spain, Sweden, the United States, and England provided samples or descriptions of armor plate up to 24 inches in thickness.

### M.I.T. Exhibit

As we attempt to recapture the atmosphere of the Centennial period, in the light of technical progress made during the intervening seven decades, it is impressive to realize that there are living today men who were undergraduates at M.I.T. in the year 1876. Fifteen years before the Philadelphia Centennial Exposition, in 1861, the charter of M.I.T. had been granted. Its founders had a magnificent vision of the part which the engineering profession was to play in the grand program of American development. They realized, too, that the Centennial Exposition would provide an excellent opportunity to promote engineering education by an M.I.T. exhibit that would acquaint visitors with the preparation for professional life offered by the pioneering school of technology.

The M.I.T. Exhibit was designed to inspire ambitious young men to matriculate in this school, with so comprehensive a program of engineering attack along the broad front of their country's industrial advance.

As these young men scanned the Institute's list of courses, they would learn that no longer should engineering be broken down into but two categories: civil and military. As listed in the Institute's catalogue for 1875 they could choose from 10 courses in engineering and science, as follows:

Course	Date Established
I — Civil and Topographical Engineering	1865-1866
II — Mechanical Engineering	1865-1866
III — Geology and Mining Engineering	1865-1866
IV — Building and Architecture	1865-1866
V — Chemistry	1865-1866
VI — Metallurgy	1873-1874
VII — Natural History	1870-1871
VIII — Physics	1873-1874
IX — Science and Literature	1865-1866
X — Philosophy	1873-1874

These courses were conducted in the fine, recently constructed M.I.T. buildings on Boylston Street. Photographs of the buildings, laboratories, and classrooms were part of the Institute's exhibit. Printed documents, descriptive of the Institute's work, drawings by students, models, samples, and instruments were also shown. An important feature was the display of the theses of the graduates of the class of the Centennial year. Today's alumnus will see the names of major prophets of his profession included in this list of undergraduate theses by men who later became prominent, notably, "The Broadway Bridge in Boston" by John R. Freeman, '76; "The Efficiency of Marine Engines" by Charles T. Main, '76; and "The Geology of Eastern Massachusetts" by William O. Crosby, '76.

Ten of the 13 graduate theses in Course I, Civil Engineering, were on bridges, which is easy to understand. Bridge design was then in a state of transition caused by the increasing locomotive loads, and the substitution of steel for wood, wrought iron, or a combination thereof. The urgent need of rational methods of design is indicated by a contemporary writer:<sup>11</sup> "An impression exists in the minds of many persons that it is purely a matter of opinion whether a bridge is safe, or not . . . In 1875 the American Society of Civil Engineers, in view of the repeated bridge disasters in this country, appointed a Committee to report upon The Means of Averting Bridge Accidents." A few months after the theses on bridge design were exhibited, the need for sound engineering in the design of structures was further emphasized by the Ashtabula Bridge disaster in Ohio, in which scores of persons were killed. The remaining theses in the Civil Engineering Course described a waterworks, discussed the water supply of a large city, and included a design for a wrought-iron post truss. Drawing subjects illustrated railroad surveys, topography, stonecutting, and bridge and roof construction.

The seven theses of Course II, Mechanical Engineering, were entitled: "Locomotive Engineering"; "Steam Boilers"; "Screw Propellers"; "The Efficiency of Marine Engines"; "Design of a Mechanical Laboratory";

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<sup>11</sup> George L. Vose, *Bridge Disasters in America*.



# This River Called Life

*Individual Initiative and True Liberal Understanding  
Are Held Necessary to America's Greatness*

BACCALAUREATE ADDRESS

By CARL HEATH KOPF

IN addressing the Class of 1949, I am impressed by the fact that more than half of those graduating from the Institute this year have already tasted of life, not alone from the protective sheltering of ivy-covered walls of a college campus, but also through the realistic and personal experiences of the world's most devastating war. This latter experience has had its effect in making today's graduates much more mature than perhaps any other graduating class in history, and certainly there is a great difference between the present generation of college graduates and mine. Today's college generation faces the world and its problems with more realism and sincerity than did my generation a quarter of a century ago. In 1925, when I was graduated from Princeton, we were experiencing in this country a crest of a prosperity wave that made every job look easy and gave almost every college graduate a false sense of security. In what we then regarded as a flourishing era, corporations bid with competitive alacrity for the untried services of the college graduate. There was a general feeling that obviously he was living in the best of all possible worlds and in the best of all possible countries.

But as we look at my college generation in retrospect, we know that the year 1925 was in the middle of what has been, uncomplimentarily, called the Jazz Age — an age of unblest memory and excess superficialities. One incident of this raccoonskin coat, playboy era will suffice to illustrate the shallowness of the times. I remember that, at my college commencement, the salutatorian's address was given in Latin. Copies of this Latin address were made available to members of the graduating class so that, through diligent attention, they might be able to follow the text, and make the necessary responses. Halfway down this printed address, a copy of which was in each senior's hands, was an asterisk. At this point in the text a footnote suggested, *hic plaudite*. So we applauded. Two-thirds of the way through the text, two asterisks led to the suggestion, *hic plaudite vehementer*. So we applauded loudly. At the end of the address, three asterisks suggested that in conclusion, *hic plaudite vehementissime*. So we applauded most loudly. Our parents turned to one another and exclaimed, "Isn't it wonderful how these young men appreciate the Latin!" Perhaps it is unnecessary for me to tell you that the copies which were distributed to our parents did not include the footnote admonitions which had been printed for the benefit of the seniors!

I give this story merely as an example of the superficial aspects of my college generation. I hope and am

encouraged to believe that such practices are absent this year as you face a world which will not be too easy in offering its solutions to your personal and public problems. I am confident that, as mature persons who have seen danger, you will resolutely face the future with courage. There is danger all around us — danger of personal failure, and danger of war on vast and indescribably bloody scale. There is also danger of economic suffering. Indeed millions of our brothers and sisters suffer untold misery at this very hour when so many others seem cushioned against every bump that life might bring.

As you are about to leave the Institute where for four years you have watched sailing on the beautiful Charles River, as did I for many years when I was one of your neighbors here in Boston, it seems to me there is a very close parallelism between the river's flow and the day-to-day events of our lives. In fact, I should like to draw your attention to some of these similarities, especially with respect to this river we call life.

The way we get through this river called life is in many respects similar to the way a man named Holstrom got through the River of the Colorado some years ago. He was the first man to navigate the Colorado alone, traveling in his small boat the 1,100 miles from the upper Colorado to Hoover Dam. The journey took him through 365 rapids and was accomplished in about 60 days. How did he do it?

First, Holstrom built his own boat. After careful study of boats built and used by many another, he designed his own. He selected a design best suited to his peculiar needs, and built to his requirements. He chose just the right cedar log out of the Oregon forest, and had it cut to his own specifications. Then he put his boat together with his own hands, according to the design he had worked out for himself. When his boat was finished, he knew it thoroughly and knew the strength and weakness of every timber and joint in it.

Second, he practiced using that craft on the River Rogue near his home. In progressively more difficult trips on the Rogue, he tested his craft in safe waters before he attempted the hazardous Colorado.

Third, Holstrom learned, soon after he started down the Colorado, that he must sometimes travel with the current and sometimes cut across it. This was a most valuable lesson, for in the tests to come his life would depend on knowing which of these possible courses to pursue under a given set of circumstances.

Fourth, he discovered that he had brought with him considerable excess baggage, or impedimenta as we

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# Bridges of Knowledge

## *Only a Truly Liberal Education Can Supply a Sense of Values and Ample Sources of Inspiration*

### COMMENCEMENT ADDRESS

By JAMES P. BAXTER, 3D

IN one of the panel discussions of the memorable celebration at the Institute last April, a speaker attempted to dispose of the problem of general education in relation to specialized education by the rhetorical question of who would trust a "generalist," the product simply of a liberal arts education, to design a bridge? This question has been troubling me ever since, for two reasons. The first is that the speaker missed the point when he assumed that general and specialized education are at war rather than complementary. If he is right, then engineering schools are at fault in devoting time and money to the teaching of the humanities and social sciences, and M.I.T. should never have joined in the partnerships which seem to me so fruitful, for the granting of joint degrees with Williams College and 13 similar liberal arts institutions.

I would no more wish to cross the Charles River on a bridge designed by a Williams student, whose education ceased when he completed his major in History or English, than I would care to have my appendix removed by one of our art majors or by the most brilliant of the electrical engineers who will receive their degrees here this morning. But I wish that all those who daily cross the Charles River bridges, whether they be engineers or not, knew that out of a lawsuit involving a bridge across this river came one of the greatest Supreme Court decisions which ever illuminated and shaped our Federal system, and that these passers-by all understood the significance of Chief Justice Taney's decision in leaving so wide a scope to the police power of the State. If your graduates can both design bridges and understand the issues in the great case of *Charles River Bridge vs. Warren Bridge*, they have proved that general and specialized education are complementary.

But the second thing that troubled me about the false dichotomy this speaker on April 1 sought to establish is that there are important bridges which must be built and kept in good order, which will never be constructed save by those imbued with the spirit of liberal education. These are the bridges across the gulfs which now yawn so alarmingly between the three vast areas of knowledge which we often describe as the humanities, the social sciences, and the natural sciences.

To the panel discussion on April 1, Sir Richard Livingston made, it seemed to me, an important contribution. I do not contend that an engineer must be able to read Greek but I submit that if he is unfamiliar with classical antiquity and with the *Legacy of Greece*,

which Sir Richard digested in a volume bearing that title, he has missed something of great importance.

It is a good thing for all of us to measure ourselves and our culture from time to time against the Greeks, for there is no better cure for the smugness with which we are accustomed to contemplate our bathtubs, our shiny automobiles, and our present national income of over 210 billion dollars. We have no philosophers that equal Socrates or Plato, no political theorists in a class with Aristotle, no sculptors to compare with Phidias, no bards like Homer, Pindar or Sappho, no playwrights of the stature of Aeschylus, Sophocles, Euripides or Aristophanes, and no orators to match Demosthenes. Our historians have a vast wealth of material at their disposal and a training in historical method lacked by their Greek counterparts, but none of them can write like Thucydides. No contemporary historian would fake a speech, as Thucydides faked the funeral oration he put into the mouth of Pericles; but if one of us tried, he could not write such a magnificent passage as that in which Thucydides distilled the essence of the Periclean age.

I do not for one moment wish to belittle the achievements of the generations that lie between our own times and the Fifth Century B.C. We have got rid of slavery on which Greek society rested, and have given to women a status denied them in antiquity. We have developed communications to a point where the President of the United States, speaking by his fireside or on a public platform, can be heard by listeners the world over; but we cannot be sure that he will speak with the wisdom of Solon.

If Aristotle, for one, came to life again and visited Washington, he would find no building to match the Parthenon, but I am confident that he, like the rest of us, would admire the Lincoln and Jefferson memorials and many of the paintings in the National Gallery. My guess is that what would impress him most in our civilization would be not our comforts and our gadgetry but the progress that had been made over the centuries in advancing basic science. If I may hazard a guess, perhaps the two things that would trouble him most would be the difficulties that now stand in the way of the man who wishes, as he wished, to take all knowledge for his province; and the low standard of political competence achieved by the average American citizen.

Whatever one may say about Athenian Democracy, and when I remind you that it rested on slavery I have presented a terrible indictment, we come off badly when we compare the political competence of the



Athenian voter with that of the average American entitled to mark his ballot or to pull the lever of the voting machine. One proof is that the Greeks could leave to chance the choice of the presiding officer of their largest political assembly, confident that the average citizen could do the job. They found it possible to trust the average voter to perform the highly difficult task of presiding over a large political assembly. How many men are there in the town of Cambridge today who could be capable of handling competently a public meeting of 5,000 persons?

If you were assigned the job of accompanying Aristotle on a fortnight's visit to our national Capitol, perhaps you would find that the thing that would astonish him the most about us Americans is that only half of us who were eligible to vote, took the trouble to vote last November 2. After he had learned, as he soon would, the main features of our political system, he could not conceal his surprise at the fact that a nationwide poll in 1946 indicated that not two adults in 10 had ever sent letters or telegrams to their representatives in Congress, and that similar polls of 1942 suggested that only half the American voters could name the congressman from their district and only 65 per cent of that select group knew what his congressman's attitude was, in the days before Pearl Harbor, on the question of peace or war.

Aristotle would not have spent very long on the banks of the Potomac before asking to meet some men like himself who had set themselves the task of understanding every aspect of the culture they lived in. Let us assume for a few minutes that I had been assigned the pleasant task of serving the Greek visitor as a guide, chauffeur, and private secretary. He soon discovered I was no walking compendium of modern knowledge and he could not understand why I could

*M.I.T. Photo*

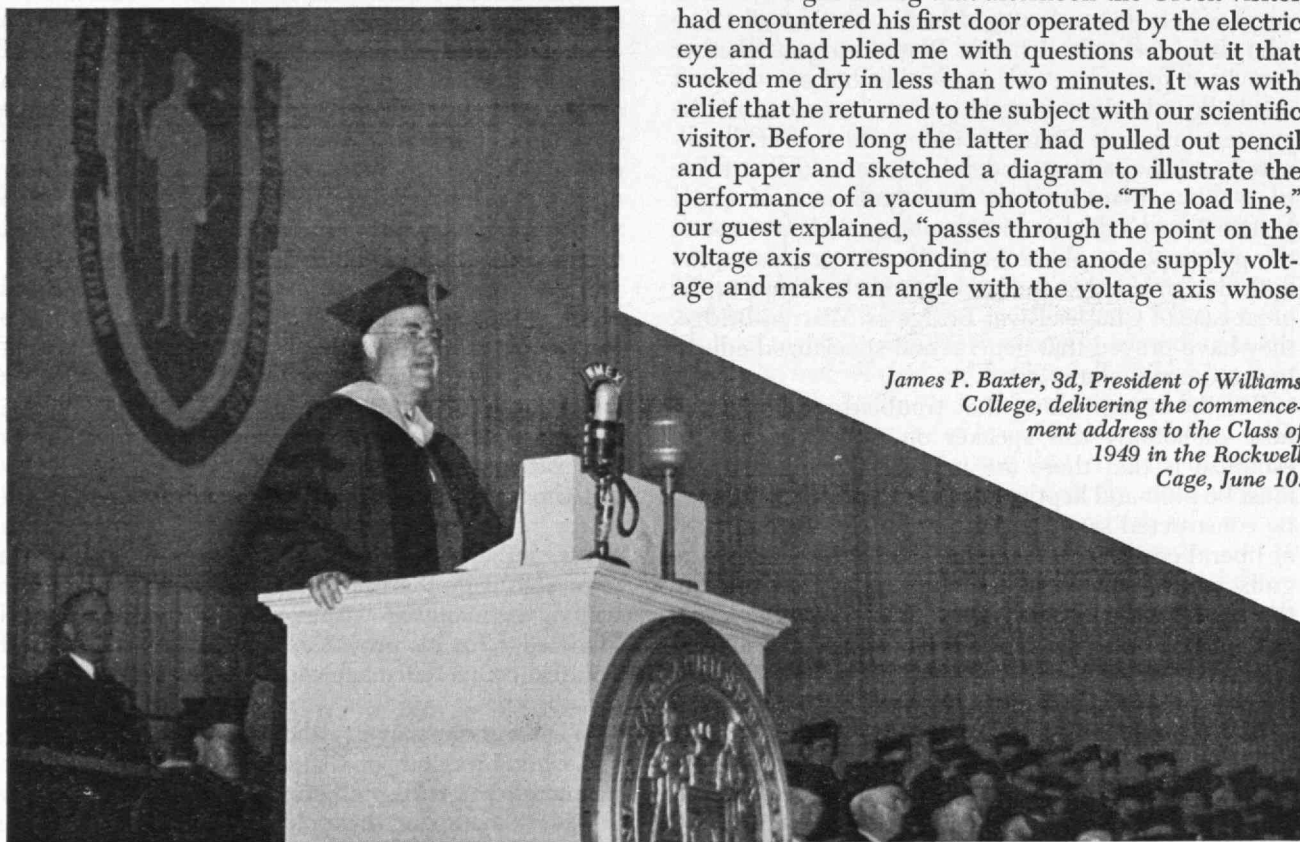
not find one for him. "Surely, Baxter," he expostulated, "there must be some one in your national Capitol who has taken all knowledge for his province. I do not ask to be initiated in a day into all the mysteries of your wondrous and complex modern civilization but I would like to find a friend with whom I can discuss science and politics, ethics and metaphysics, the nature of law and the art of poetry."

"Indeed, sir," I confessed in some embarrassment, "there ought to be someone in town familiar with all the interests over which your mind ranged so widely in Fourth-Century Athens, but we've gone in for specialization, and the best I can do for you is to ask three friends to dine with us tonight who between them can perhaps provide you with the information you wish. One of them, an important figure in the American Council of Learned Societies, has great competence in what we call the humanities, the second is an acute student of politics, well versed in history and economics, and the third, an engineer of great breadth of mind and salty wit can, I am certain, fill the bill in the natural sciences."

It was a wonderful evening for all concerned and a memorable date in the history of the club at which we dined, but the insatiable Greek became more and more frustrated. First he discovered that the engineer, though one of the most gifted of conversationalists, did not profess to know the whole field of the natural sciences, let alone to have much competence in the social sciences and the humanities. Our other guests confessed that they, too, had mastered only portions of their own special field and each knew little about the interests of the other. Aristotle had acquired, for his visit, a remarkable fluency in English, but it was the English of a cultivated gentleman and not that of our specialized fields of learning.

In our sight-seeing that afternoon the Greek visitor had encountered his first door operated by the electric eye and had plied me with questions about it that sucked me dry in less than two minutes. It was with relief that he returned to the subject with our scientific visitor. Before long the latter had pulled out pencil and paper and sketched a diagram to illustrate the performance of a vacuum phototube. "The load line," our guest explained, "passes through the point on the voltage axis corresponding to the anode supply voltage and makes an angle with the voltage axis whose

*James P. Baxter, 3d, President of Williams College, delivering the commencement address to the Class of 1949 in the Rockwell Cage, June 10.*



tangent is equal to the reciprocal of the load resistance (expressed in volts per ampere). Above saturation the characteristic curves in the diagram corresponding to equal increments of light flux are practically horizontal, equidistant straight lines and therefore intersect the load line at equidistant points. This shows that if the anode voltage of a vacuum phototube is always sufficiently high to give saturation current, the current and the voltage across the load resistor are essentially proportional to the flux."

"That may very well be true," replied Aristotle, "but I confess that even with the help of your diagram I have difficulty in following your explanation. Since our other guests also seem to be completely baffled, let me change the subject and ask you why Gallup, Crossley, and Roper guessed so wrong on the outcome of your last election." Since almost as many people have strong ideas about public opinion as about education, the conversation became general. Aristotle soon took three of us out of our depth and proceeded to press the political scientist even more closely. The latter warmed to his subject and was soon meeting fully the one requirement that President Lowell used to say was essential before a subject could be truly deemed a "science," that is, that the language used by those who specialized in the new field must be incomprehensible to a man with only an ordinary education. Our guest, a man with an extraordinary memory, quoted a well-known social psychologist as follows:

"A vote is a vote; it is of no consequence whether the feeling with which it is given is strong or weak, so long as it is on the 'approval' side. This is, of course, a shortsighted position, both for democratic ideals and for the prediction of possible future opinion trends, a matter with which every political leader must be deeply concerned. The writer would suggest that an opinion index of true dynamic significance might be afforded by discovering, through polling, that social-logical continuum on which there would be an increasing skewing of the distribution on the intensity dimension of each succeeding step." At this the rest of us looked blank, and Aristotle threw up his hands in despair. "Think nothing of it," I interjected. "Lindsay Rogers once said he didn't understand that either."

Turning to our third guest, Aristotle asked him what literary theories were being advanced by younger critics. Our expert in the field of the humanities summed up recent trends and quoted the following passage as a sample:

"The work of art, then, appears as an object of knowledge *sui generis* which has a special ontological status. It is neither real (like a statue) nor mental (like the experience of light or pain) nor ideal (like a triangle). It is a system of norms of ideal concepts which are intersubjective. They must be assumed to exist in collective ideology, changing with it, accessible only through individual mental experiences, based on the sound-structure of its sentences. Our interpretation of the literary work of art as a system of norms has served its purpose if it has suggested an argument against the insidious psychological relativism which must always end in skepticism and finally mental anarchy."

"A little windy," said Aristotle, "but I see the gentleman's point." But our guests from the natural and social

sciences obviously found the language strange. After the party broke up, my Greek friend expressed his amazement. "By division of labor," he observed, "you moderns have made marvelous advances in extending human knowledge, but you have failed lamentably to integrate your thinking. You say that this Thomas Jefferson, whose monument I admired this afternoon, tried like me to master a wide range of fields of learning but that none of your generation would dare attempt this. How can you expect to reach sound conclusions in any field of scholarship unless you know about the others? Your philosophers and your historians must be a sorry lot indeed. Your guests this evening would, in their individual spheres, put any of my Greek contemporaries to shame, but each seemed to understand very little about the specialties of the others."

"Well," I replied, "if you will come with me to see the Library of Congress tomorrow, it will help you to an answer. I have always thought the most remarkable thing about you Greeks was that you achieved so much without having a public library at your disposal. As a student in Paris in 1925 I was startled to find that the National Library there already housed 440,000 volumes on the history of France alone. When you see the greatest of our libraries tomorrow you will realize better than you can tonight both the advantages and the disadvantages of our stores of accumulated knowledge."

Our visit to the Congressional Library was the high point of Aristotle's visit. I took him first to the main reading room, as I did Thomas Mann on his first visit to the Harvard Library, and pulled out the trays containing the cards bearing his name. Then I took him to the shelves and showed him the texts and the translations of his writings; the biographies and the monographs devoted to his thought. His first exclamation was the same as Mann's, as he handled some of the dog-eared volumes on the shelves, "they still do read me." Then, overcome by the bulk of the two big buildings with their 8,000,000 volumes, Aristotle turned to me and said:

"Certainly, Baxter, your scholars must find the dead hand of the past a heavy one. If they have spent so much time on glosses on my thought, and on other ancient writers, how do they find time and energy to strike out for themselves on new paths? One of our guests last night told me that writers had developed almost no new types of literature since my own time save the novel and the short story, and something which your friend apparently did not regard as so high a form of the literary art, a movie script. We Greeks may have been short of information, such as weights these endless shelves, but the sap of creation ran strongly within us."

Then a new idea struck him, which moved him deeply. "How can you select from this vast mass of knowledge what your young men must master? Is there agreement among you as to certain books which all must study, or do the young lose themselves in these vast storehouses of recorded thought?" "Sir," I replied, "some 25 years ago the Harvard History Department tried to prepare such a list of books in that single field but found that only one work was on the list of every member, your own book, which we call



the *Politics*. I had hoped we could agree on one book more, a study many deem fit to stand beside your own, the book we call *The Federalist*, but we failed of agreement."

It is a serious dilemma we face, that underlies this imaginary dialogue. How can any of us keep abreast of the current production in the arts and sciences, let alone survey the mountainous accumulations of past ages? In medicine the advances of science have been so great that the time for study required of a doctor has steadily lengthened until the date when a man begins active practice approaches ever closer to the date of his retirement. If we rely on the subdivision of labor alone to solve our problem then who will take the comprehensive view?

Unless bridges are built from the area of medicine and public health to the areas inhabited by the rest of us, and unless there is an adequate traffic of ideas across them, how can we count on adequate public and private support for them, on wise legislation in the field of public health or the avoidance of unwise legislation? Specialists in medicine early developed one of the most formidable jargons known, so bristling with \$64.00 words as to challenge all competitors. If sufficient translations into the vernacular are provided the traffic on this bridge will be heavy, for we need the information for the conduct of our own lives and the rearing of our children.

But the traffic must not be one-way, for the scientist and the engineer have great need of ideas imported from the areas of the social sciences and the humanities. The recent study by a task force of the Hoover Committees headed by Tracy S. Voorhees revealed shocking waste and duplication in the field of public health, that indicate how far our competence in public administration has lagged behind our medical knowledge. The Federation of Atomic Scientists has done an admirable job in spreading to a wider public a comprehension of some of the problems of the atomic age, but it is only too apparent from some of their writings that the authors lacked a firm grasp of history, economics, and international relations. Let us hope, too, for a large two-way traffic on the bridges between the sciences and the humanities. Marjorie Nicolson has made a great reputation with her studies of the influence of scientific thought on literature. John Livingston Lowes used to ask the students in his class on recent English poetry to read Eddington's *The Nature of the Physical World* in order to get an understanding of the development of scientific thought at the time in which these poets wrote. But let us consider the traffic in the other direction.

In whatever area we live and work, we need what literature, art, music, history, philosophy, and religion can give us. For man needs not only knowledge and skills but a sound sense of values and ample sources of inspiration. With these he can become a human dynamo; without them he is too often a machine stuck on dead center. Helmholtz was, I contend, a better physicist because of his love of music. From what mysterious sources did Faraday, who had so little formal education, derive the beauty and clarity of his style.

Though two wars in the space of 35 years have undoubtedly been the chief factor in the spread of social-

ism in America, I wonder if another factor of importance was not the decline in the influence of religion. For religion in America, in its many varieties, has never been a state affair, has never emphasized or sought to promote man's dependence on the state but rather his self-reliance and his personal relationship to God. It has been a powerful contributor to the dynamic of individual enterprise, and as its influence has weakened, the road to socialism has thereby been made easier. It is significant that so many of the foes of individual enterprise are foes of religion as well, though I do not mean to imply that all advocates of the extension of government are godless.

This problem, like all the others I have raised this morning, boils down at last to the question of education. It was immensely heartening to me to hear President Killian at his inauguration come out so strongly as he did for breadth of training in the preparation of engineers. That is a long and honored tradition in this Institute, and its outward and visible signs are the long lists of courses in the social sciences and the humanities to be found in your catalogue, the scholarly attainments of your teachers in those fields. Similar testimony to the belief of the M.I.T. authorities in the advantages of broad training is found in the arrangement the Institute has made with 14 colleges, of which Williams is one, for a five-year program of study, three years in the liberal arts college and two years at M.I.T., followed by the granting of both the A.B. and the B.S. degrees by the two institutions. An important option permits four years at the liberal arts college and two years at M.I.T. The system has worked well and proved a practicable solution to the problem of combining general and specialized education for engineers. I recall with pleasure the brilliant performance of some products of this combined system on their Rhodes Scholarship examinations.

As a warm admirer of your great institution, and the head of one of the 14 colleges allied in this joint program, I would like to venture one observation on the problem of combining general and specialized education for engineers. That is, that a great deal depends on the climate of opinion in the place where the education is offered, either at an institute like this, in two institutions allied in a joint program, or in an engineering school that forms part of a great university.

In all the engineering schools with which I am familiar, the departments of mathematics and of physics, to take but two examples, have an immense prestige, comparable to the position of the football team and its coaches at Notre Dame. I would not have it otherwise, but what does concern me is the prestige of the humanities and the social sciences in those engineering schools: not the number of the courses offered, or the eminence of the professors or even the enrollment in the courses, though all those things are important. What I want to know is, how essential do the undergraduates think are these courses in the humanities and the social sciences. And since a climate of opinion is a complex thing, I want to know not only how the students and the administration regard these prestige factors, but how the alumni of the institution and the parents and the prospective employers of the undergraduates regard them.

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# Doing the Impossible

*Our Strength and Stability Lie in Diligently Demonstrating  
Our Deep and Abiding Faith in Our Free Society and  
Its Capacity for Self-Improvement*

VALEDICTORY ADDRESS

By JAMES R. KILLIAN, JR.

IN speaking to you on this happy occasion, I must first acknowledge a feeling of special kinship with this graduating class. Two months ago you had the responsibility of helping to induct a new president of the Institute and of initiating him into some of the facts of life as students see them. Experienced as you are in dealing with freshmen, you handled a freshman president with skill and forbearance. Fortunately for me, you also demonstrated a spirit of generous cordiality and of good will, which I acknowledge now with heartfelt appreciation.

In a very real sense, therefore, this is my commencement as well as yours, and I shall always feel a special attachment for this class. As we get along in our new careers, I hope that we may remember that we started together and that we may from time to time share our experiences along the way.

In considering what I might say to you today, I have thought of many themes. I could stress your responsibility as professional men to be guided in all you do by the professional ideal of ministering to the public. I could stress your obligations as experts, not to be entrapped by your specialized expertness in a narrow groove. As specialists you have a responsibility to relate your specialty to a broad context of social objectives. I could also point out the importance of your each joining and taking active part in a professional society, and undertaking some community responsibility, in your city, your state, and your nation.

But today, as we start together, I wish to take another direction. I wish, first, to put into the record some of your special characteristics and achievements as a class, and, second, to discuss certain attitudes which seem to me important to young men as they take up their careers in a divided world.

This graduating class has many distinctions which deserve recording as you become Alumni. You are the largest class ever to be graduated from the Institute. The Corporation has awarded today over 900 degrees, which is one-third more than were awarded in the last normal year before World War II. More significant is the fact that you as a group have demonstrated exceptional maturity and scholastic achievement in your work at the Institute. The fact that over half of your class are veterans of World War II is a partial explanation of this record, but I think it also fair to say that our whole student body, perhaps the most highly selective that we have ever had, has shown exceptional performance in the postwar years.

You are also highly diversified in your backgrounds. You come from 44 states and 21 foreign countries. Those of you who received the baccalaureate degree obtained your preparatory training in 410 high and preparatory schools. Those of you who have received advanced degrees obtained your undergraduate education in over 100 colleges and universities. I doubt that your cosmopolitanism is exceeded by any class in any American institution.

As the first class since the war to follow a nearly normal academic course, you had the opportunity — and grasped it — to rebuild our program of student government and student activities, which were partially disrupted by the war. Not only have you made a major contribution toward this reconstruction, but you have given student activities a new vitality and demonstrated that our already effective student government can assume still broader responsibilities in our community life.

During the past four years there has developed an unusually close relationship between students and Faculty, which has been helpful to both. I cite the program of the Student-Faculty Committee in promoting a constructive exchange of ideas between teachers and students on the art of teaching and learning. I recall, also, the open forums which this committee has sponsored on teaching techniques and the new social room which this committee recommended and which has now been authorized, to bring together staff and students for informal discussion of mutual problems.

Other important achievements to note are the new judiciary committee of the student government, which brings students into more effective partnership with the Faculty on matters of student discipline, and the reorganized Inter-Fraternity Conference, which has won national recognition for its success in promoting self-government among our fraternities. During the past two years the Institute Committee, which heads our student government, has worked closely with the Corporation Committee on Student Activity, a collaboration that has borne fruit in many ways. The summer program for foreign students, which was carried through so successfully last summer and which is to be repeated this summer, has been a fine demonstration of social action by students.

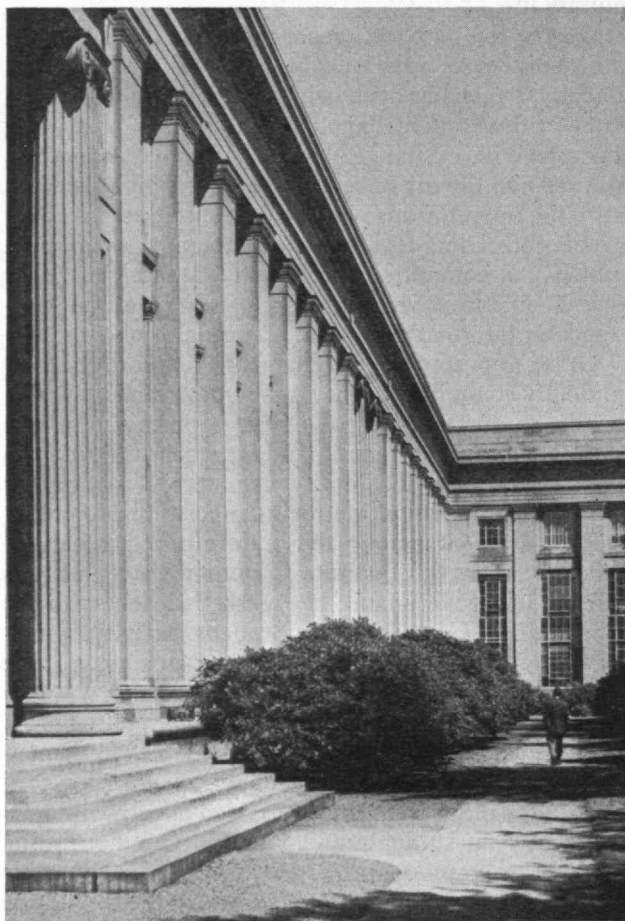
In many other ways there has been effective interaction between students and Faculty. Our flourishing athletic program represents the fruits of responsible student management working collaboratively with the



staff. The result has been that the Corporation has enthusiastically provided funds as rapidly as they have become available, for increased recreational facilities. The students, on their part, have efficiently employed these facilities, even though they are still inadequate, for operating one of the most comprehensive athletic programs in any college. This past year, 2,500 students, or nearly 75 per cent of the undergraduate student body, have participated in sports, both intercollegiate and intramural. Our athletic program is a fine example of athletics complementing education and not competing with it.

In all of these advances, your class and the classes associated with you have played an important part. The planning which you have done and the representations which you have made to the Corporation and Faculty have aided in setting new goals for the future. The new Development Program undertaken by the Corporation, with its goal of \$20,000,000, includes provision for an adequate auditorium, additional student housing, and adequate recreational facilities. These goals, so effectively advocated by the students, have become official goals and we are now seeking funds to realize them.

In acknowledging these advances which you have aided as a class, I have deliberately emphasized that part of our total educational program at M.I.T. which tends, in the minds of those not close to Technology, to be overshadowed by the prestige of our professional education. In my inaugural address I stated as one of M.I.T.'s objectives the development of an environment which performs in the broadest sense an educational



function itself, not in a passive way but in a dynamic way. The whole complex of living facilities, activities, and atmosphere must be skillfully arranged to provide the kind of environment which contributes to the development of leadership, breadth, and standards of taste and judgment.

A college essentially is a group of people with a common aim, a company of scholars, to use the ancient phrase. The effectiveness of this community depends upon the quality of the people in it and their willingness unselfishly to work for the common good. This means that the Faculty and students who compose this company of scholars must be guided by a spirit of altruism in all that they do. This is the only fitting way to live in a community that must be altruistic if it is to minister to the mind and to the spirit. I salute the Class of 1949 for the share that it has taken in promoting and maintaining this kind of community.

And now, having looked into your immediate past, let me consider briefly your future, especially certain attitudes which I believe to be important.

I suggest that we might compare your experience in passing from college to a career to that of an airplane passing through the transonic barrier. While you may have considered your work at Technology to have demanded supersonic speed at times, it has actually been but the running start for your professional careers. Until now, your parents, your friends, and your instructors in school and college have been the designers who have provided you with the accelerated take-off, the swept-back wings, and the properly shaped leading edge to enable you to make the transition from subsonic to supersonic flight.

These graduation exercises are evidence that we believe that the design is sound, that your preparation and training have been of unexcelled quality, and that all tests show that you are ready. We say this with the realization that as you pass from academic life into the workaday world, you will encounter the shock waves that always accompany this transition and that these shock waves have a special severity, as we shall see, in 1949. Your encounter with them will call not only for strength and skill but also for a willingness and a determination to take risks and to be bold. You must have that love of adventure which drives men from the comfortable security of the known to the uncertainties of the unknown and mysterious, the sense of adventure that drives men to achieve the impossible, as supersonic flight was once considered.

To have that sense of adventure which leads men to break through the transonic barrier and to explore the world beyond it, a man must possess certain of the ancient virtues: He must be self-reliant and he must possess that disposition to inquire, which we call curiosity. He must have the imagination to see what lies beyond mere personal gratification and he must have courage. With all of these, there must be faith — the substance of things hoped for, the evidence of things not seen. He must be, as William James said, tough minded, which is another way of saying stouthearted.

The sense of adventure which is made up of these ingredients is a quality young men need today as never before. They need it to combat certain current trends which I believe to be dangerous to a peaceful nation and a peaceful world.

The first of these trends is an excessive preoccupation with security — not with security of opportunity but with security from taking risks. Just the other day we had a conference at M.I.T. with a group of industrial representatives who are responsible for the employment of college graduates by one of the great companies. They reported that last year the question most frequently asked by college seniors interviewed by them was: What salary am I to get? This year, however, the question most frequently asked by college seniors over the country is: What kind of pension plan have you got? These industrial representatives were quite understandably concerned that this change in attitude represented something more than a proper tendency to do long-range planning and that it might indicate instead an undue preoccupation with financial security. I hope that this latter interpretation is not correct and that the college graduates of America still have enough faith in themselves, enough self-confidence and adventure to concentrate on the job that lies immediately ahead rather than on the pension that comes with old age.

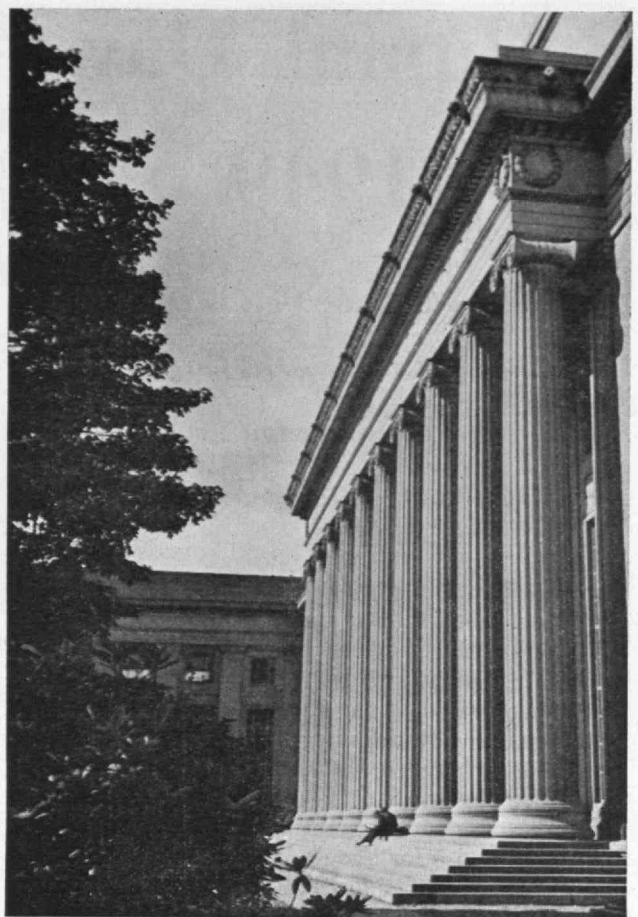
Ralph Waldo Emerson in addressing a group of students many years ago had some wise things to say about this tendency when he exhorted his listeners to avoid the *maxims of a low prudence*. When young men are willing to renounce their ideals and ambitions for premature comforts and security, "then dies the man in you," he told his student audience; "then once more perish the buds of art, and poetry, and science, as they have died already in a thousand thousand men." "Explore, and explore," he urged. "Be neither chided nor flattered out of your position of perpetual inquiry. . . . Why should you renounce your right to traverse the star-lit deserts of truth for . . . premature comforts?"

The second trend or state of mind which calls for a sense of adventure is the fear and frustration which have occasionally appeared as a result of the war. We hear all too frequently the statement that the war has left us with a sense of frustration and of cynicism. Just the other day I heard a teacher observe that college students sometimes reflect the current mood by exhibiting frustration.

Doubtless this state of mind is a result of the disappointment we all feel that the successful conclusion of World War II did not usher in a period of sweetness and light. Instead we find ourselves engaged in an unrelenting cold war, with all of its tensions and poisonous effects.

But why should this aftermath of the war produce frustration and cynicism? Why, in the first place, had we any right to expect that the most destructive war in history, with all of its attending disruptions and exhaustion and hate should be followed promptly by a period of amity and accord and Utopia? To use the figure of a Seventeenth-Century English writer, "The storm is over, the wind lieth, but the ocean worketh a great while." In truth, we had no reason to expect that the tidal waves of hate could be suddenly damped, even though we had high hopes that we could avoid a divided world.

Without minimizing the tensions and the trials of the cold war which we are now fighting, I venture the judgment that this period of crisis can be made a tem-



pering process that will strengthen and mature both nations and people. We can make it so in our own United States if we can avoid the thralldom of fear and frustration. The British historian, Arnold Toynbee, recently made some interesting observations on the possible beneficial effects of the cold war. He told an anecdote about an English fisherman who kept his fish alive in tanks aboard his boat until he came into port. In every tank he put a catfish. The catfish might eat some of the herring, the fisherman admitted, but it kept the others alert, active, and in prime condition.

"Communism is the catfish of the Western herring pond," Toynbee observed. "The cold war, which will last a good many years, in some ways will be more difficult to live through than a war of action. . . . We must learn," he said, "to live with this worry, a difficult thing for many of us who are not used to such an idea. If we can settle down to the cold war, live with it with good nerves, play our cards right, and have enough staying power, we can win. . . . The Russians want to impose or impress a way of life on the rest of the world. I do believe that by being there and worrying us they will cause us to do all kinds of things in our own way to change our way of life and improve it."

This seems to me to be the only proper attitude for us to take in the present crisis. We must accept it as a challenge and meet it, not with fear but with stout-heartedness. Too many American people have reacted to the cold war by cowering before Communism when they should be taking the offensive by confidently stressing the vigor and the permanence of our free society and by working to improve it.

(Continued on page 592)



# Alumni Day

## 1949

***New Student Housing Unit Is Dedicated as  
Technology Graduates Its Largest Class of  
947. Major Construction Program Aided  
by \$5,100,000 in Gifts***

**A**S Technology graduates returned to Cambridge this year for their annual Alumni Day reunion on June 11, they had ample opportunity to learn of the great plans in store for the Institute's postwar role in higher education. They took part in the formal opening of the new dormitory unit on Memorial Drive, saw the new Hayden Memorial Library and the new 12,000,000-electron volt electrostatic generator building under construction, and were encouraged that an apartment house for Faculty and staff would provide additional much needed housing facilities in Cambridge on Memorial Drive adjacent to the President's House. The recently completed Supersonic Wind Tunnel, where aeronautical research will be conducted for the United States Navy, as well as for industry, was dedicated and open for inspection.

Those who preferred a less active program were able to see motion pictures of the recent Convocation and the inauguration of Dr. Killian as the Institute's 10th president. Another film showed the inauguration of President Compton and the activities of Alumni Day in 1930. A third film, in color, portrayed student life at the Institute at the present time.



*M.I.T. Photo  
President Killian, the Reverend Carl Heath Kopf, and Dean  
Baker, in usual reading order, as they took part in the bacca-  
laureate services on June 9 in Walker Memorial.*

Although Alumni Day was the main attraction for most, a large group of Alumni came to Cambridge earlier in the week to take part in the commencement exercises of the largest class ever to graduate from Technology. A total of 979 degrees was awarded to 947 students of which approximately half were veterans of World War II. This year's graduating class exhibited scholarship considerably above the average, besides taking active part in extracurricular activities. In athletics alone, for example, last year some 2,500 students participated in athletic activities of one kind or another.

At the Stein-on-the-Table Banquet at the Hotel Statler on the evening of June 11, Marshall B. Dalton, '15, in his first report on the status of the Committee on Financing Development, announced that gifts totaling \$5,100,000 had been made available to M.I.T. including a gift of \$1,000,000 by Alfred P. Sloan, Jr., '95, for the new Sloan Metal Processing Laboratory. And for the first time, Alumni heard a new president — James R. Killian, Jr., '26, — make the annual report to Alumni instead of Dr. Compton who was unavoidably prevented from being present during the exercises of commencement and Alumni Day.

### ***Class Day Events***

On June 9, the class photograph was made on the steps of Building 10, immediately preceding the baccalaureate service held at 11:00 A.M. in Walker Memorial. Everett M. Baker, Dean of Students, led the call to worship and President Killian gave the scripture reading. The baccalaureate sermon, "This River Called Life," which The Review is happy to present on page 562, was delivered by the Reverend Carl Heath Kopf, minister of the First Congregational Church in Washington, D.C.

At 2:00 P.M. on June 9, Class Day exercises were held in Walker Memorial in traditional ceremonies in which the graduating class passes on leadership of student affairs to the new Senior Class, as it is officially welcomed into membership in the Alumni Association by C. George Dandrow, '22.

Leonard F. Newton, '49, chairman of Senior Week, welcomed those in attendance and called upon William S. Newell, '99, President of the Bath Iron Works and member of the Corporation, to speak for the 50-year Class. Mr. Newell brought best wishes and greetings from the Class of 1899 to members of the Class of 1949, and admonished the graduating class to "Keep your lathe centers true, trust in the Lord, and you will get along fairly well."

J. Thomas Toohy, President of the Class of 1949, then transferred the class ring to Robert W. Mann, President of the Class of 1950, in ceremonies symbolizing the transfer of student leadership to the new Senior Class.

Ivan J. Geiger, Director of Athletics, then made the first annual award to the outstanding athlete of the graduating class, by awarding a trophy to Theodore R. Madden, '49, who, for three successive years, won the Tech "T" in both hockey and lacrosse, and was captain of the hockey team last year.

Speaker for the 25-year Class was William H. Robinson, Jr., President of the Class of 1924. Directing his remarks to the present state of the American way of



*M.I.T. Photo*  
Taking prominent part in Class Day activities (left to right) are: William H. Robinson, Jr., '24, speaker for the 25-year Class; President Killian; Leonard F. Newton, '49, chairman of Senior Week; C. George Dandrow, '22, President of the Alumni Association; J. Thomas Toohy, President of the Class of 1949; Charles W. Holzwarth, Secretary-Treasurer of the Class of 1949; and William S. Newell, '99, speaker for the 50-year Class.

living. Mr. Robinson spoke against the philosophy, advocated by some holders of political office during the past decade and a half, of "getting something for nothing." He urged the graduates to make their own living in the world through their own honest toil, and pointed out how superbly their training had fitted them for the American way of life.

Mr. Toohy then presented a silver service set to President Killian as the gift of the Class of 1949. In accepting this handsome gift, Dr. Killian expressed the hope that this year's graduates would be frequent visitors to the new dormitory where they would be able to see the class gift in frequent use.

In traditional manner the graduating class then applied for admission into the M.I.T. Alumni Association by presenting a skit entitled "M.I.T. Tale of the Century Convocation." This clever skit parodied the recent Convocation by predicting what might occur should the Institute have a similar event 50 years hence when members of the present class would take leading parts in the Technology celebration. Students taking important parts in this skit included: Mr. Toohy, Thomas L. Hilton, Leonard F. Newton, Adriaan P. Van Stolk, Paul E. Weamer, David L. Yeomans, Robert L. King, Ronald L. Greene, Robert L. Nesbitt, and William C. Mitchell. Mr. Van Stolk wrote the words for "We're Marching Today to Tech" for which William E. Katz wrote the music. The skit was staged by James K. Berman.

Next on the Class Day program was the presentation of the Class of 1949 banner to Mr. Toohy by C. George Dandrow, '22, President of the M.I.T. Alumni Association, symbolizing acceptance of the Class Day skit as qualifying the graduating class for membership in the Alumni Association.

Mr. Van Stolk then concluded the exercises with the traditional Beaver Oration, chronicling the history of the Class of 1949 and humorously predicting events which might be in store.

### Commencement

Rockwell Cage, dedicated last year as the athletic center for indoor events, was the scene of the commencement exercises of the Class of 1949. In the largest class ever to graduate from the Institute were four women students: Phyllis Ann Fox, Theresa Amelia Uhrich, Elizabeth Ann McElhill, and Jane Berggren Blizard.

Commencement ceremonies were opened with the invocation by Theodore P. Ferris, Rector of Trinity Church in Boston. The commencement day address by James Phinney Baxter, 3d, President of Williams College, appears on page 563 of this issue.

Degrees were presented by President Killian who was assisted in this pleasant duty by Edward L. Moreland, '07, Executive Vice-president; Julius A. Stratton, '23, Provost; William W. Wurster, '17, Dean of Archi-



*M.I.T. Photo*  
J. Thomas Toohy, President of the Class of 1949, turns over the class ring to Robert W. Mann, President of the Class of 1950, during Class Day exercises in Walker Memorial.





M.I.T. Photo

Married couples played a more prominent role than usual during commencement and Alumni Day this year. At left, President Killian congratulates Jane Berggren Blizard and Robert Brooks Blizard, probably the first husband-and-wife team to receive their Ph.D. degrees from the Institute. In the center, Mr. and Mrs. C. George Dandrow, '22, greet Hermann C. Lythgoe, '96, and Mrs. Lythgoe who celebrated their 48th wedding anniversary on June 11. At the right, President Killian beams approvingly on Mrs. Killian who was made an honorary member of the Alumni Association at the banquet on June 11.

tecture and Planning; Thomas K. Sherwood, '24, Dean of Engineering; and George R. Harrison, Dean of Science. Following the presentation of degrees and announcement of honors, President Killian addressed the graduates on "Doing the Impossible." Again it is The Review's pleasure to include this address (page 567) in this issue.

In the afternoon, members of the graduating class, together with members of their families, attended the President's Reception in Walker Memorial.

#### Honorary Secretaries Meet

While the President's Reception took place in Cambridge, members of the staff met with approximately 50 Honorary Secretaries at the Brae Burn Country Club in Newton for the annual business meeting of this loyal group of Technology ambassadors of good will.

The policies on admission of students, on scholarship, and on alumni activities were described by B. Alden Thresher, '20, Director of Admission; Paul M. Chalmers, Assistant Director of Admissions; Thomas P. Pitre, Dean of Freshmen; and H. E. Lobdell, '17, Executive Vice-president.

In the evening, there were brief remarks by President Killian, Dr. Stratton, recently appointed provost of the Institute, and other administrative officers.

#### Alumni Day — 1949

Doors of Building 7 were opened for registration during Alumni Day at 8:30 A.M. to take care of 1,000 Alumni returning to M.I.T. for Alumni Day activities which included opening of the New Dormitory whose construction was made possible by a \$500,000 gift from Alumni.

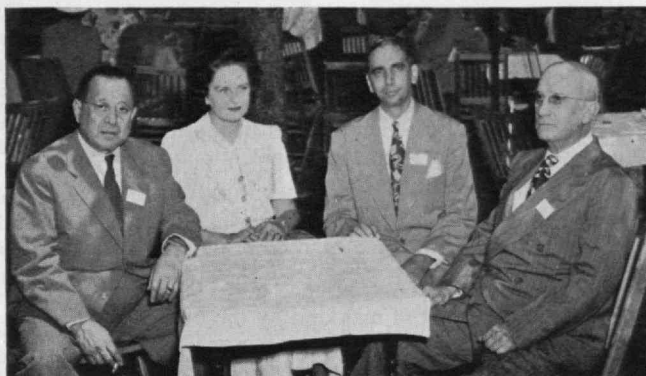
During the morning, trips were scheduled to the Supersonic Wind Tunnel which was opened for the first time, to the new 300,000,000 electron-volt synchrotron, to the Gas Turbine Laboratory, to the exhibition of modern aircraft and automotive engines, to the Rockwell Athletic Cage, to the new Charles Hayden Memorial Library, and to the Eastgate apartments, the latter two of which are still under construction. In Huntington Hall motion pictures were shown of "M.I.T. — 1948," illustrating student activities at the Institute, and of the 1949 and 1930 inauguration ceremonies of Presidents Killian and Compton, respectively.

In the bright sunshine of Du Pont Court, the buffet style Alumni luncheon was held at 12:30 P.M. under canvas in traditional informal and friendly manner. Here, returning Alumni could — and did — chat informally with classmates they had not seen for years, or they made new acquaintances. A separate table was set aside for the 50-year Class, and President and

M.I.T. Photo



Registration for Alumni Day was held in the lobby of the Rogers Building on Massachusetts Avenue. All during the morning, about 900 Alumni, a few of whom are shown here, picked up their tickets, viewed exhibits, or visited points of interest at Technology.



*M.I.T. Photo*  
These two informal groups were photographed during the luncheon on Saturday afternoon in Du Pont Court. In Column 1 are gathered representatives from neighbors to the south: Ramon F. Munoz, '09, President of the M.I.T. Club of Monterrey; Trinela B. E. Bejarano, 2-44; Gustavo A. Calleja, '43, of Havana; and J. F. Barrera, of Monterrey, father of Rodolfo F. Barrera who received his degree and graduated this June. At the other table are shown (left to right): Mrs. A. Laurence Brown; A. Laurence Brown, '13; C. Adrian Sawyer, Jr., '02, President-Elect of the Alumni Association; and Mrs. C. Adrian Sawyer.

Mrs. Killian had luncheon with members of the Class of 1899. The Class of 1894 also had a separate table.

### **New Dormitory**

At 3:30 P.M. on Saturday, June 11, the new Senior House was officially opened by a tea and a reception by President and Mrs. Killian and Mr. and Mrs. Dandrow. Visitors had the opportunity of viewing the new structure which was first put to unofficial use during the Convocation, and since then has housed on the average of 50 to 60 Institute visitors each week. Views of the new dormitory (page 578) will hint at its unusual construction; additional information on this serpentine structure was included in The Review for November, 1948.

In dedicating the new dormitory at formal exercises at 4:15 P.M., President Killian outlined the need for the new housing facilities, and indicated that the demand for "on the lot" housing had increased since World War II because so many athletic and other extracurricular activities were now a regular part of student life at M.I.T., and introduced Frank M. Baldwin, Director of Housing and Dining Facilities. Dean Wurster spoke of the building design, pointing out that Alvar Aalto, the architect, had sought to make full use of sunlight while simultaneously providing a view up and down the Charles River for the maximum num-

ber of occupants. A. Warren Norton, '21, chairman, Alumni Fund Board, spoke of the role which Alumni played in making the new unit possible.

### **Alumni Banquet**

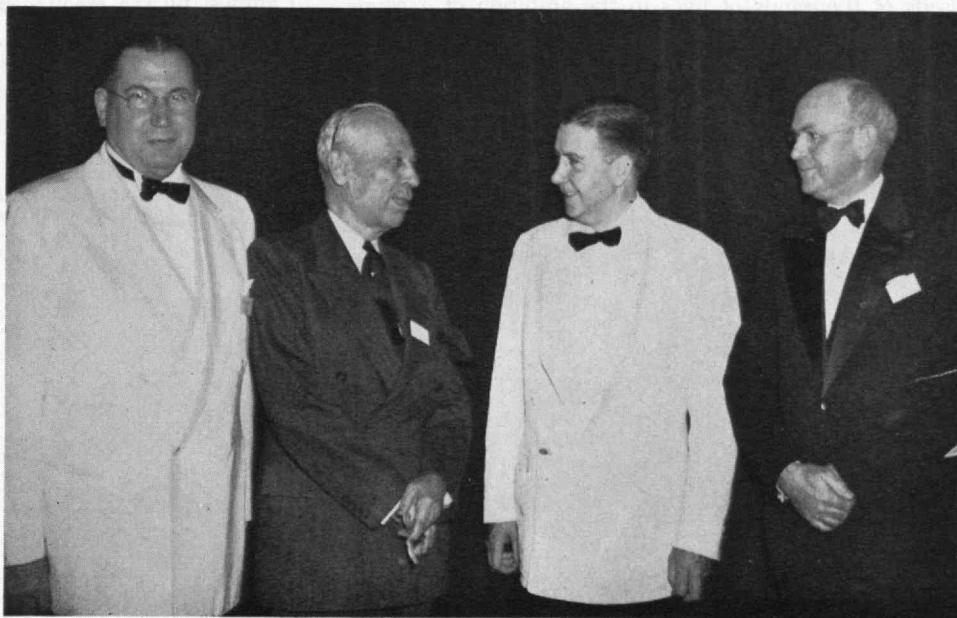
At 7:00 P.M. approximately 800 Alumni gathered in the Main Ballroom of the Hotel Statler in Boston for one of the famous Stein-on-the-Table banquets which have become the highlight of the annual Alumni Day reunions.

Upon conclusion of the dinner, Mr. Dandrow introduced those at the head table, and called upon Arthur L. Hamilton, President of the Class of 1899. Mr. Hamilton presented a check for \$15,000 to President Killian, as the gift of the 50-year Class. William H. Robinson, Jr., President of the Class of 1924, made the presentation of the 25-year Class gift a check in the amount of \$81,300, the largest such gift ever to be received, according to Horace S. Ford, Treasurer of the Institute.

Marshall B. Dalton, '15, chairman of the Committee on Financing Development, made his first formal report to Alumni on the work of his committee. Although the fund will not get fully under way until the fall, Mr. Dalton was able to report a gift of \$1,000,000 from Alfred P. Sloan, Jr., '95, which will be used for the construction of the Sloan Metal Processing Labo-

*M.I.T. Photo*

Taking time off for a few informal words before the Alumni Banquet (left to right) are: C. George Dandrow, '22, President of the Alumni Association; Alfred P. Sloan, Jr., '95, President Killian; and Marshall B. Dalton, '15, chairman, Committee on Financing Development.





ratory. Also announced at the banquet were other gifts amounting to an additional \$4,100,000, or a total for the year of \$5,100,000.

President Killian graciously accepted these splendid gifts on behalf of the Institute and called for a few remarks from Mr. Sloan. In response, Mr. Sloan stated that, although his contribution had been called a gift, he regarded it merely as repayment of a debt he owed M.I.T. for the education he had obtained more than half a century ago. It was Mr. Sloan's view that even those Alumni who could not afford to make a contribution in the forthcoming fund drive could still benefit the Institute by spreading the gospel of Technology's needs for capital funds.

Mr. Dandrow then called upon Mr. Lobdell to escort Elizabeth Parks Killian to the platform to receive the certificate initiating her into the Alumni Association as one of its few honorary members. In response to this honor, Mrs. Killian made brief remarks in gracious acceptance.

In concluding the events of the banquet — at which steins designed by Henry B. Kane, '24, were, as usual, a most welcome souvenir — President Killian delivered his annual message to Alumni. It was the first time in many years that this message was not delivered by Dr. Compton who was prevented from being in Boston during Alumni Day, but a telegram from Dr. Compton was read to the assembled guests. President Killian's address "Peace, Work, and Health" follows in full.

### ***Peace, Work, Health***

At the opening of the Pasteur Institute of France in 1888, its founder, Louis Pasteur, delivered an address which eloquently voiced the humane ideals of a scientist devoted to the welfare of his country and of all mankind. In the closing paragraphs of this address, he spoke in words which are strikingly appropriate today:

"Two opposing laws seem to me now in contest," he said. "The one, a law of blood and death, opening out each day new modes of destruction, forces nations to be always ready for battle; the other, a law of peace, and work, and health, whose only aim is to deliver man from the calamities which beset him. The one seeks violent conquests, the other the relief of mankind. The one places a single life above all victories, the other sacrifices hundreds of thousands of lives to the ambition of a single

individual . . . Which of these two laws will prevail, God only knows. But of this we may be sure, that science, in obeying the laws of humanity, will always labor to enlarge the frontiers of life."

In this time of international tension and unrest, we can gain some comfort from the insight into another period of tension as revealed by Pasteur. More importantly, I suggest that Pasteur's second law — the law of peace, and work, and health — is the ruling concept and ideal of M.I.T. in this year 1949. Our purpose is to enlarge the frontiers of life through science and technology, to contribute to the relief of mankind by the benign application of these two great forces. This is our goal and we can have faith in the power and spirit of our kind of institution to contribute toward the peace and welfare of the nation.

I suggest, too, that if we look within the Institute we may observe the application of Pasteur's law of peace, and work, and health. Certainly we are hard at work, and by every test we are peaceful and in good health as an institution. We have even recovered from the confusion and excitement of the Mid-Century Convocation. In fact, this great event certainly provided a healthful stimulus and a spiritual lift to the entire Institute community which will long be remembered.

Yesterday the Corporation awarded nearly 1,000 degrees, the largest number ever given at an M.I.T. commencement. I am confident that these young men as a group were as well trained to meet the exacting demands of their professional fields, and as well equipped to become good citizens, as any group before them. The group which graduated yesterday had a major part to play in rebuilding our undergraduate life after the disruption of World War II, and I think it fair to say that we now find ourselves with a strengthened student government and a system of undergraduate activities more vigorous than ever before.

### ***Athletics at M.I.T.***

We do not usually think of M.I.T. as an institution having a flourishing athletic program, but it does. This past year, over 2,500 students participated in intercollegiate and intramural sports. I hope that during the academic year, some of you may have an opportunity to visit our athletic fields on a Saturday afternoon, to observe the intensity with which they are used and see what a revolution has taken place in our athletic program in recent years. During the past two years we have been able greatly to extend our athletic facilities by the addition of nearly 400,000 square feet of playing space on the West Campus, by the erection of the Rockwell Cage, by the

M.I.T. Photo



*The Class of 1899, proudly celebrating its 50th year as M.I.T. Alumni, had its own table under canvas in Du Pont Court for the informal luncheon on Alumni Day which President and Mrs. Killian attended. In this section of the Class of 1899 table shown at the left Mrs. Killian may be seen near the second group of flowers. President Killian stands immediately to the right, with left side toward the camera.*

addition of eight new tennis courts provided by the Alumni Fund, by the provision of a new baseball diamond and new lights for field illumination for evening sports practice, and by the provision of a full-time athletic director and additional coaches.

Another example of the healthy condition of our student life at the Institute is the development of closer student-faculty relations and the creation of better opportunities for the two groups to work together for common educational goals. For many years our Student-Faculty Committee served mostly as a mechanism for handling student gripes. In the last two years, this committee has turned its attention to a constructive consideration of educational problems, and we now find ourselves in the interesting and happy situation of having students actively working with the Faculty for the strengthening of our teaching program. During the past year, this Student-Faculty Committee, under the wise leadership of its student chairman and of Professor John T. Rule, '21, of our own Faculty, ran a series of open forums on the art of teaching; the forums were well attended both by students and by staff. At the opening of school next fall, this same committee will sponsor a series of lectures for new instructors on the techniques of teaching. The committee is also sponsoring a plan for the systematic rating of instructors by students. This plan has been carefully worked out to avoid the usual hazards of this kind of thing and to enable students to reach an objective judgment as to the effectiveness of their courses. The Student-Faculty Committee proposed to the Institute that we set aside a pleasant and comfortably furnished room, where students and Faculty members can come together informally, and I am glad to report that we have been able to provide the space and the funds to make this room available.

### Housing

In all of this development of a better environment and a more active program of student activities, the most significant event of the year, of course, has been the completion of the Senior House, which was formally opened this afternoon. I hope that the fresh and forward-looking design of this great new housing unit has set the standard for additional new housing units at the Institute, all designed to promote friendly and responsible community living. I am certain that with housing of this kind, we can do a better job in developing that breadth of outlook which must be the hallmark of men who carry the heavy responsibilities of the scientist and engineer. We need

additional living facilities to take care of from 1,000 to 1,500 more students on the Institute's campus.

### Education and Research

Turning now to the Institute's educational and research program, we have ample evidence that the law of peace, and work, and health is in operation. We have here one of the most outstanding groups of scholars in the world and they are working loyally and with fine morale. They are also opening up new fields of science and technology and developing new educational procedures which are in the pioneering tradition of the Institute.

During the year, our School of Engineering established at Oak Ridge, Tenn., a practice school of nuclear science and engineering, where graduate students in engineering may receive first-hand training in this great new field. During the year the Faculty, with the approval of the Corporation, also established a new program of graduate study in engineering leading to a new professional degree intermediate between the master's and doctor's degree. This program is designed to provide a broader graduate training for those students who do not expect to become research specialists but wish to achieve the breadth that will best prepare them for becoming engineering executives.

To provide the proper facilities to permit our staff and students to do their most effective work, the Institute during the past year has had the largest building program in its history, save for the building of the new plant in Cambridge. The Charles Hayden Memorial Library has been going up on schedule and that part of the library building which is to house the humanities departments will be completed about August 1. Not only will this new library provide a great central collection in the professional fields to which the Institute is devoted; it will also provide the arrangements and the materials which will greatly stimulate our humanities program and will contribute toward our objective of providing a broader educational base.

Still another important facility is approaching completion on the Charles. This is the Supersonic Wind Tunnel, erected with funds provided by the United States Navy and designed to test aircraft and missile models at supersonic speeds ranging from 1,000 miles per hour to 3,000 miles per hour. This outstanding laboratory facility will enable the Institute better to serve government, industry, and basic research in the field of aerodynamics. Its erection is a fine demonstration of collaboration between a private institution and government.

M.I.T. Photo

At the Class of 1894 table (in clockwise order from opening in foreground) are: Mrs. Warren, Henry E. Warren, Charles G. Abbot, Henry F. Copeland, Samuel C. Prescott, A. A. Treflin (standing), Harold M. Chase (left of Mr. Treflin), Norwin S. Bean, Walter V. Batson, Charles B. Beach, Mrs. Beach, William H. King, Mrs. King, Mrs. Crary, Horace A. Crary, Mrs. Hunt, and Edward M. Hunt.





Another pioneering research facility started during the year is the 12,000,000-electron-volt electrostatic generator. This great generator will be used to bombard the nuclei of atoms and will be administered by our Laboratory for Nuclear Science and Engineering. It will also be used for studying the biological effects of high-energy radiation on living and nonliving matter. Still another long-needed laboratory facility was planned during the year and its financing completed. This is the Hydrodynamics Laboratory and Towing Tank. For 20 years, the Institute has been planning and hoping for this kind of facility and it is a great stimulus to our Departments of Civil Engineering and Naval Architecture that we are now to build the laboratory. It will provide an adequate hydrodynamics laboratory on the eastern seaboard for the first time and at long last will make a towing tank available to our students and staff for educational and research uses.

While improving our facilities, we have made encouraging progress in providing a better environment for our staff. Perhaps the most significant move of this sort was the salary adjustment put into effect last autumn. In "take-home" pay, the salary scale at M.I.T., while not the highest, is among the half dozen highest in educational institutions in this country.

During the year, plans were completed for the construction of a large apartment house on the most easterly part of the Institute's river frontage. This apartment house, to be known as "Eastgate," is being financed by the New England Mutual Life Insurance Company and is built from designs developed by the Institute's own School of Architecture and Planning. It provides 261 apartments, all with a fine view of the river and with cross ventilation. In the rental of these apartments, members of the M.I.T. staff will have first priority. This new housing development will contribute toward a more integrated and better-rounded community at the Institute and certainly it will provide ideal accommodations for a large number of our staff members who wish to live close to the Institute.

### Finances

The total expenditures of the Institute have continued at a high level. Our budget for the year probably will reach \$22,000,000, the highest peacetime budget in the

history of the Institute. On this total expenditure of \$22,000,000, we will conclude the year with a deficit of \$250,000 to \$300,000. This deficit results directly from the salary increase given last fall, but it was felt that this increase was so essential that we could properly incur a deficit this year. The increase in tuition which was announced last fall will take effect with the opening of school in September and will go part way in helping the Institute to balance its budget. As the M.I.T. Development Program moves forward, the additional funds it will make possible will help not only in providing better facilities for education and for student living at the Institute but also will aid in stabilizing the Institute's finances. One of the most heartening parts of the current trend in gifts to the Institute is the steady increase in support from industrial corporations. Nearly a quarter of all the gifts received by the Institute last year came from industrial companies.

### Administration Additions

In conclusion, let me mention two administrative changes at the Institute which have taken place since April 1. The first of these was the creation of a new post carrying the title of "provost." The provost is an academic officer who shares with the president and the deans the administrative direction of the Institute's program. His primary concern is the administration and co-ordination of educational activities which do not fall within the jurisdiction of any single School. At its meeting in March, the corporation of the Institute elected to this new post Professor Julius A. Stratton, '23, of the Department of Physics. Professor Stratton's background, both in electrical engineering and in physics, his brilliant direction of the Research Laboratory of Electronics, and his membership on the Committee on Educational Survey have provided him with an extraordinarily rich background for his new responsibilities. I am personally delighted and reassured to have him as an administrative colleague and to have available his wise and judicial counsel in discharging my own duties as president.

The second administrative appointment made since April was that of Frank M. Baldwin as Director of Housing and Dining Facilities. Mr. Baldwin will supervise the Institute's increasing facilities for student housing and

*(Continued on page 586)*

M.I.T. Photo



*Celebrating its 25th anniversary since graduating from M.I.T. was a large delegation of the Class of 1924. A few members of this Class are shown here, as photographed at the Alumni Day luncheon. In clockwise order are: Sarkis M. Zartarian, Howard E. Whitaker, Maynard L. Harris, Thomas F. Bundy, William W. Sturdy, Mrs. Harris, Walter J. Gress, and Richard F. Shea.*

# THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

## *To the Staff*

**F**OUR new academic and administrative posts have been filled recently in the Institute's program of selecting outstanding men to carry out its growing responsibilities in the field of higher education, according to a recent announcement by James R. Killian, Jr., '26, President.

Rolf Eliassen, '32, who received the master of science degree in 1933 and the doctor of science degree in 1935 from the Institute, began his duties on July 1 as head of the sanitary division of the Department of Civil and Sanitary Engineering, in charge of all research carried on in the division. Dr. Eliassen served with two consulting engineering firms before going to the Illinois Institute of Technology as assistant professor of sanitary engineering in 1939. One year later he became associate professor and director of the Sanitary Engineering Research Laboratory of New York University, to which post he returned as full professor in 1946, after serving as a lieutenant colonel during World War II.

John T. Howard, '35, has been appointed associate professor in the Department of City and Regional Planning. Professor Howard graduated from the Institute in 1935 with a bachelor in architecture degree in city planning following his graduation from Yale University. After receiving his master in architecture degree in city planning from the Institute in 1936, Professor Howard became traveling fellow in regional planning for the year 1936-1937. His professional experience includes one year of service with the New England Regional Planning Commission, five years with the Regional Association of Cleveland, consulting work in city planning for the Cleveland Metropolitan Housing Authority, and several years' service as lecturer in city planning at Western Reserve University, Cleveland. From 1942 until May, 1949, he was director of the Cleveland City Planning Commission.

Charles A. Powel will begin his duties at the Institute this fall as lecturer in Electrical Engineering, teaching advanced courses in the use of electric power by heavy industry. Mr. Powel was educated in London, England, and at the Institute of Technology of Canton Berne, Switzerland, and carried on engineering assignments in England and later in Japan for the Swiss firm of Brown Boveri and Company. In 1919 Mr. Powel joined the Westinghouse Electric Corporation and rose to the post of assistant to the vice-president in charge of engineering. Mr. Powel's leadership in engineering was rewarded in 1944 when he was elected to the presidency of the American Institute of Electrical Engineers. In 1946 he was granted leave of absence from Westinghouse to serve as a section chief of the Allied Control Commission in Berlin. In 1948 he served as power consultant to the Stillman Mission, which surveyed the industries of China for the Economic Co-operation Administration.

Frank M. Baldwin is the appointee to the newly created post of director of Housing and Dining Facilities at the Institute whose duties include administration of all undergraduate dormitories, Walker Memorial, the Graduate House, and the Women's Dormitory, as well as Westgate and Westgate West. The increase in dining and housing facilities, with an annual operating budget of \$1,500,000, has necessitated the creation of a full-time directorship to handle the growing management problems of these services. Mr. Baldwin is a graduate of the Babson Institute and for the past 18 years has served as manager and later as vice-president of a well-known chain of restaurants in Greater Boston.

## *Elastic Colloids Research*

**P**RESIDENT James R. Killian, Jr., '26, Professor Ernst A. Hauser, and Raymond E. Drake, '08, President of the Elastic Colloid Research Corporation, were the principal speakers at the ceremonies which marked the opening, on May 25, of the Institute's new laboratory for the study of rubber and plastic materials. The laboratory will be associated with the R. S. Crawford Memorial Graduate Research Fellowship, awarded to an advanced student to study rubber and plastics. Both the research facilities for the laboratory and the Crawford Fellowship have been provided by the Elastic Colloid Research Corporation.

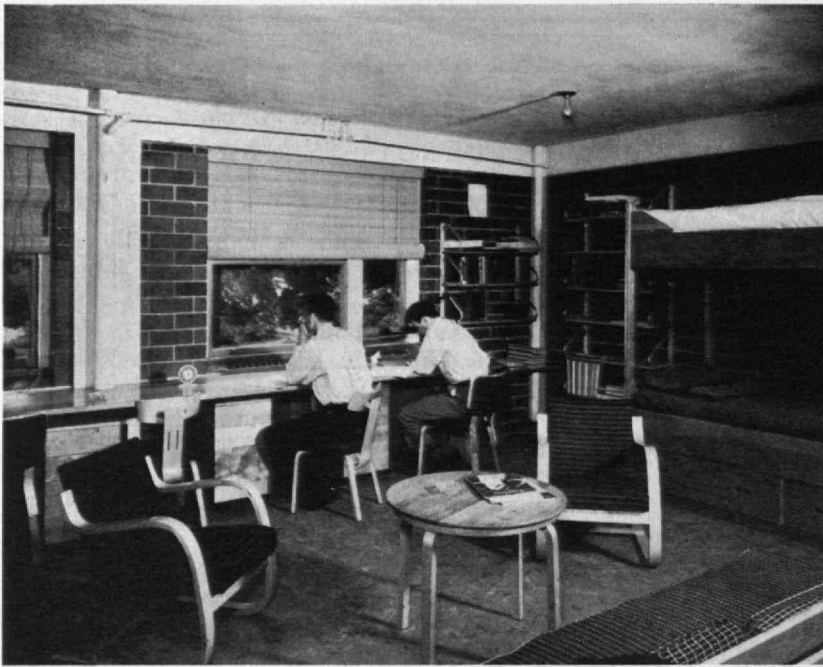
The Plastics Laboratory, headed by Professor Hauser of the Department of Chemical Engineering at the Institute, is equipped with the latest types of machinery and testing apparatus used in the rubber industry, and provides facilities for a wide range of research in the scientific field of elastic colloids, specifically natural and synthetic rubber.

## *Sloan Metal Processing Laboratory*

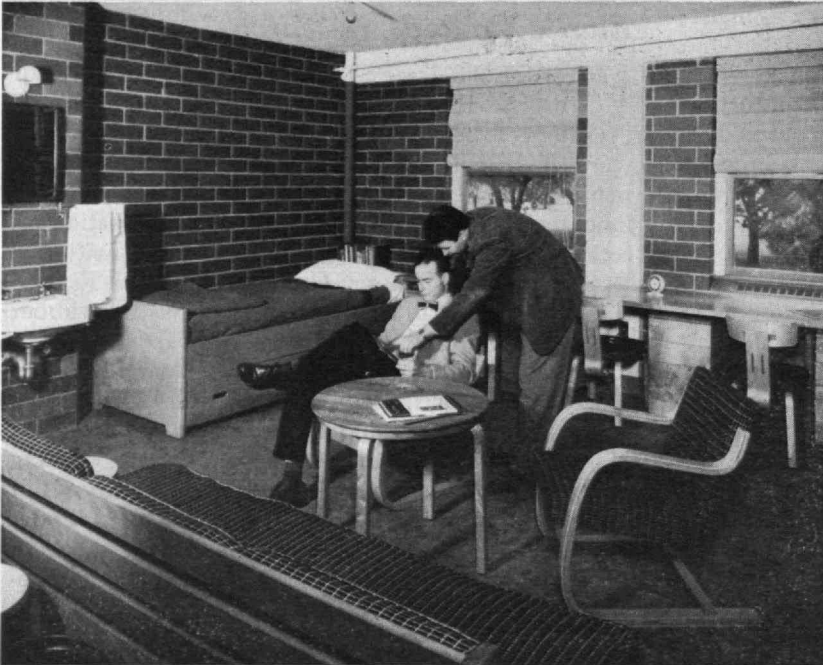
**C**ONSIDERABLE impetus has been given to what President Killian, in his Alumni Day address, has called "a pioneer effort on the part of the Institute to combine in an educational and research program the metallurgical and mechanical engineering approach to the fabrication of materials." Through the aid of a generous gift from Alfred P. Sloan, Jr., '95, the Metal Processing Laboratory is soon to be housed in adequate quarters in a new building to be built on Vassar Street just off Massachusetts Avenue, adjacent to the main group of Institute buildings. Construction of the new laboratory will be started during the coming year, President Killian announced.

By bringing together under one roof all related facilities and staff so that the subjects in metal processing can be taught and demonstrated with modern equipment, the Sloan Metal Processing Laboratory will enrich and extend the Institute's entire engineering program.





M.I.T. Photo



#### THE NEW DORMITORY . . .

whose erection was made possible by a gift of \$500,000 from Technology Alumni, was formally opened on June 11 in dedication ceremonies at which the speakers were: A. Warren Norton, '21, chairman, Alumni Fund Board; William W. Wurster, '17, Dean of Architecture and Planning; and President Killian.

The two photographs at the left show the interior of one of the student's living rooms overlooking the Charles River. A portion of the first-floor lounge, one of several spots where students may congregate for recreation, is shown immediately above.

#### Strictly Business

ALUMNI President C. George Dandrow, '22, presided at the 269th meeting of the Alumni Council on May 23 at the Campus Room of the Graduate House with 91 members and guests in attendance. President Killian reported on current developments at the Institute, referring particularly to the appointments of Professor Julius A. Stratton, '23, as Provost and of Frank M. Baldwin to the new post of director of Housing and Dining Facilities.

In the first of a group of routine annual reports, the secretary-treasurer presented the results of the recent alumni ballot, already recorded in the June issue of *The Review*, and reported that eight Faculty and staff members had visited 10 Technology clubs between April 27 and May 17.

The executive vice-president's annual report reviewed the activities of the Alumni Association, *The Review*, and the local clubs. Attention was called to

the progress of the Twenty-Five Year Class Committee and the recently appointed committee which is studying the existing pattern of Alumni Day. The 50th anniversary of *The Review* and the special Convocation issue were cited in this year's activities.

In its final report the Committee for Consideration of War Memorial recommended that the names of those serving in the Armed Forces during World War II be inscribed on the west half of the north wall of the lobby of Building 10 in keeping with the World War I memorial. Other reports, too extensive to include here, were also presented.

The speaker of the evening, Alan C. Bemis, '30, Director of Weather Radar Research at the Institute, showed slides and motion pictures illustrating the manner in which radar was being used for the daily study of the weather. He indicated briefly the various ways of collecting the weather radar data and of correlating them with the meteorological information obtained by standard procedures.

## Survey for Chemical Engineers

THE Visiting Committee on the Department of Chemical Engineering\* met with Professor Walter G. Whitman, '17, Head of the Department, Karl T. Compton, chairman of the M.I.T. Corporation, and most of the members of the staff on March 2, 1948, at Cambridge. Committee members present were: Messrs. Wiess, Curme, Thomas, Herty, Murray, and Wilson. Mr. du Pont was unavailable. This report was delayed in order to include results of the surveys hereinafter referred to.

Professor Whitman reported on a number of outstanding honors and special recognitions that had come to various members of the staff, particularly the Priestley Medal of the American Chemical Society and the Lamme Award of the American Society for Engineering Education, both of which went to Professor Warren K. Lewis, '05. It was also noteworthy that members of the staff were taking a more active part in general M.I.T. activities: Professor Thomas K. Sherwood, '24, is now dean of engineering; Dr. Lewis, chairman of the Faculty Educational Survey Committee; and Professor William H. McAdams, '17, chairman of the Faculty this year.

The Department has 42 doctor of science students in spite of having had to eliminate about half of the reasonably well-qualified candidates who applied. In addition, about 20 of the 106 men working for a master's degree will probably go ahead to their doctorate.

The present distribution of enrollment makes a very heavy load of undergraduate teaching, more than double that prewar. The staff is carrying this overload as a temporary proposition, and will review the question of the desirable load as soon as the enrollment is stabilized. Their present idea is to take care of a 30 per cent increase over prewar as against the 20 per cent increase which was proposed to the Visiting Committee in 1947, and which the Visiting Committee felt was inadequate.

It was agreed that the Committee should aid the Department by making a limited survey to compare the probable demand for chemical engineers for the period 1935-1940 with the number hired in 1947, and those expected to be hired during the period 1948-1951. The results of this survey have been given to the Department. While the number of employers surveyed was not large, it did include most of the principal employers of M.I.T. chemical engineers in the past. The survey indicated that the average yearly number expected to be hired (from all schools) in 1948-1951 will be about the same as the number hired in 1947, and about 2.5 times as large as the 1935-1940 average. The expected output of chemical engineers from all institutions appears to be somewhat in excess of this 2.5 to 1 ratio to prewar, so there may be a moderate over-all surplus in those years, particularly of those with bachelor's degrees. However, the M.I.T. projected increase of only 30 per cent will fall well below the demand for their men. Also, the number of doctors of science desired in 1948-1951 showed a sharp increase to 10 per cent of the total. Since many

\* Members of this Committee for 1947-1948 were: Robert E. Wilson, '16, chairman, Lamot du Pont, '01, Charles H. Herty, Jr., '21, Charles A. Thomas, '24, George O. Curme, Jr., Robert L. Murray, and Harry C. Wiess.

schools give no doctor of science degrees in Chemical Engineering, it would appear that M.I.T.'s percentage should exceed 10, compared with about 5 per cent at the present time.

The overloading of the teaching staff since World War II shows up clearly in the small number of publications; the staff contributed only 12 articles last year. The Committee suggested that, at least during the period of peak teaching load, the Department might well employ an assistant with writing ability who would aid Faculty members in the time-consuming task of putting worth-while theses and research results into form suitable for publication.

The Chemical Engineering Practice School has been re-established and is doing excellent work. The School handles about 48 students a year.

The Committee was gratified to know that, following its recommendation, a school of engineering practice in the field of atomic energy was about to be set up at Oak Ridge, and suggested that the Department should endeavor to "clear" most of the Chemical Engineering staff so that they could visit back and forth and help integrate knowledge of general applicability which had been developed in this new field. It was felt that the Department of Metallurgy should be added to the other Departments encouraged to participate, in view of the great importance of metallurgical problems.

The Committee discussed in some detail the question of the desirability of M.I.T.'s going wholeheartedly into a nuclear-training program, eventually leading to a special course in the subject. It was felt that this offered M.I.T. an opportunity to pioneer in another field, as it had in so many fields in the past, and that the Chemical Engineering Department would probably have to take the leadership in organizing the proposed practice school and in working out the course. It is the feeling of the Committee that the chemical engineering aspects of nuclear research and development have been somewhat neglected because the physicists have naturally been the pioneers and leaders in most of the work done to date.

The Committee favored the Department's plan of broadening the selection of minors for graduate students and particularly encouraged taking minors in English.

## Tools for Building Engineering

THE Visiting Committee on the Department of Building Engineering and Construction\* met at the Institute on February 17, 1949. C. George Dandrow, '22, and Henry R. Shepley were unable to attend because of unavoidable commitments. The morning session of the Committee was attended by the staff of the Department, and changes in curriculum, the proposed professional degree, space needs for the Department, research in the Department, and placement were presented and discussed.

The Committee feels that the transfer of the Concrete Laboratory to the jurisdiction of the Department is an excellent move, but it feels that the Department should be given ample space, properly related to its

\* Members of this Committee for 1948-1949 are: Harry J. Carlson, '92, chairman, John H. Hession, '13, Percy Bugbee, '20, C. George Dandrow, '22, Lou R. Crandall, Henry R. Shepley, and Beauchamp E. Smith.



present laboratory facilities, to cover this substantial, additional load.

The Committee is pleased with the suggestion that conferences or colloquia on our present current problems and techniques in the industry be initiated. Among the several subjects for such conferences it feels that one on "Mechanical Characteristics and Testing of Plastics" and another on "Modular Design" should take precedence at this time. Any such conferences should be based upon, and take advantage of, the unique technological position of the Department, or they should be in areas in which the Department possesses active correlated representation industrially or technically.

In the proposed revisions in structural-design courses, the Committee recommended that the overall pedagogical objective should be to develop an analytical approach in the student, and that routine designs be made only to the extent that they prepare the student to use his theory.

The Committee feels that the proposed professional degree will be helpful for particular graduate students and will give those students who apply for such work an opportunity to round out their training in a more professional way. It is not felt that the Department needs to add any considerable number of graduate courses to accomplish the end sought but that many graduate courses now given in other departments will give much of the needed background.

The Committee has been concerned for some time about the space made available to the Department. It seems that all space changes made to date have been transfers and have provided no additional areas. The Department should be provided with two drafting rooms of its own and this can be accomplished, when space is released by the completion of the Hayden Library, by a return of the old drafting room in Building 5 and the addition of the space now occupied by the Paper Museum, or by providing two drafting rooms and an additional office on the second floor of Building 5. The Committee is interested in the proposed unification of space in a new building on Vassar Street as suggested by the Department. This proposal should be considered as a part of the development program now proposed.

The Committee continues to be impressed with the activities of the Department in the field of research. The work being done in the plastics and adhesives field, under the direction of Albert G. H. Dietz, '32, Associate Professor of Structural Engineering, is unique and stimulating. The extension of the studies on cementation materials, under the direction of James A. Murray, Associate Professor of Materials, should develop many areas as yet not understood. Interdepartmental projects, such as the Solar House, should be encouraged and extended. In general, the Committee feels that the Department should be encouraged to enlarge its coverage of other areas in the field and should be given the necessary space and auxiliary funds to aid in doing so.

Following an inspection of the laboratories, the Committee held an executive session and made several suggestions to the head of the Department on minor matters which would increase the effectiveness of the staff.

## Report on Civil Engineering

THE Visiting Committee on the Department of Civil and Sanitary Engineering\* held well-attended meetings at the Institute on December 6 and 7, 1948. The Committee is deeply impressed by the progress that has been achieved by Professor Arthur T. Ippen, Head of the Hydraulics Division, in developing equipment and means of instrumentation in the present Hydraulics Laboratory, and especially by the high level on which research in this laboratory is being planned and pursued. In fact, it is quite remarkable that with comparatively restricted facilities, this laboratory has succeeded in covering a very broad field of investigations of very complex and difficult nature. These facts lead us to report that the Hydraulics Laboratory at M.I.T. has become a leading laboratory in this country.

While there are a number of first-class hydraulic laboratories in the West, there are none, at least at present, in the eastern part of the United States. Hence, in establishing the new Hydrodynamics Laboratory, M.I.T. will be fulfilling an obvious necessity, particularly since a laboratory of this type will serve not only as a means for research, but should develop into a center of instruction and dissemination of knowledge on a high level. We, therefore, recommend that the new Hydrodynamics Laboratory be given the highest possible priority in the M.I.T. Development Program.

The Committee reviewed with unusual interest the investigations dealing with the effect of impulsive loadings on reinforced concrete structures being conducted in the Structural Dynamics Laboratory by Robert J. Hansen, '48, Assistant Professor of Structural Engineering, and the plans that have been developed by Dr. Hansen for the development of the Concrete Laboratory during the remainder of this year. During this development, the preliminary appropriation for this purpose will be substantially spent for basic structural changes. While it is expected that some of the equipment for this laboratory can be obtained as a result of sponsored research, it is recommended that an additional capital appropriation be made next year to further the development of this laboratory, and it should be noted that an annual operating account for the Concrete Laboratory will be needed.

In our report of last year, we recommended that approximately \$10,000 be made available to build a universal loading frame, which was suggested by Charles H. Norris, '31, Associate Professor of Structural Engineering. Professor Norris showed the Committee a preliminary plan of the apparatus he has in mind and the Committee once more brings to the attention of the Administration the desirability of appropriating the necessary funds. Without equipment of this type, opportunities to participate in structural research programs will be greatly reduced. Small scale model work is of educational value, but is of limited value for general structural research.

*(Continued on page 582)*

\* Members of this Committee for 1948-1949 are: Thomas C. Desmond, '09, chairman, Allan R. Cullimore, '07, Richard H. Gould, '11, Harold Bugbee, '20, H. W. McCurdy, '22, Boris A. Bakhmeteff, and Thomas F. Farrell.

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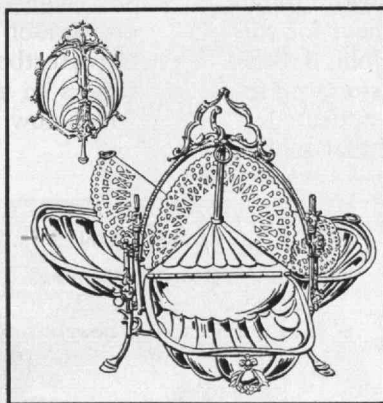
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## THE INSTITUTE GAZETTE

(Continued from page 580)

The Sanitary Engineering Division brought forth a proposal that the Department should offer the degree, master of science in sanitary science, for students whose backgrounds and interests are essentially of a scientific, rather than an engineering, nature and who wish to pursue work in the fields of Sanitary Chemistry, Biology and Bacteriology, and in Public Health, rather than in the design phases of Sanitary Engineering. It is believed that this suggestion has merit and should be subjected to further study.

Consideration was given by the Committee to a preliminary report on the possibility of setting up a co-operative undergraduate course in Civil Engineering, involving working periods at the Bureau of Reclamation in Denver, and presumably extended to one or more other organizations. While it is realized that such a program has advantages, the Committee feels that such an arrangement should not be initiated without a great deal of further study. Some of the members of the Committee are inclined to doubt the wisdom of such a co-operative plan, feeling that the benefits to be derived can be largely gained through a judicious program of summer employment for students. The successful efforts of Professor John B. Babcock, 3d, '10, and Herman J. Shea, '33, Associate Professor of Surveying, in locating jobs for students last summer is commended, and it is hoped that such a

program will be pursued vigorously next summer and in summers to come.

The new program of Department seminars being run this year under the chairmanship of Myle J. Holley, Jr., '39, Assistant Professor of Structural Engineering, under which 10 outstanding speakers are brought before the students and staff of the Department each term, under the sponsorship of the various organizations and divisions of the Department, is excellent and is in line with recommendations made by the Committee in previous years.

The Committee learned with interest of the proposed two-year graduate program leading to professional degrees such as Civil Engineer and Sanitary Engineer. It is believed that such a program will fill an educational need in the fields of Civil and Sanitary Engineering, and that these new degrees should be offered by the Department.

In conclusion, the Committee is impressed by the fact that the Department staff now includes a relatively large number of young men, many of whom are graduates of other institutions, and that activities are not entirely confined to the classroom. Noteworthy in the latter aspect is the participation of Donald W. Taylor, '34, Associate Professor of Soil Mechanics, and his assistant in the proceedings of the International Soil Congress in Europe last summer and the current preparation by structural staff members of authoritative textbooks. It is believed that these are important factors in accounting for the vigorous atmosphere which now typifies the Department.

(Concluded on page 584)

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## THE INSTITUTE GAZETTE

(Concluded from page 582)

### Projects for Health

ALL but one of the members of the Visiting Committee on the Medical Department\* were able to attend the meeting which was held on March 18, 1949. The work of the Department was discussed with President Killian, Dr. Dana L. Farnsworth, Medical Director, and Malcolm G. Kispert, 2-44, Administrative Assistant to the President. The meeting which continued through luncheon provided opportunity for many points to be considered, and inspection of the Homberg Infirmary.

Your Committee is very well satisfied with the work of the Medical Department. The care of the student body as carried out by the Department is excellent, and we believe that the work is being done as economically as is possible when one considers the quality of the service given.

Dr. Farnsworth has instituted several projects which we believe are of especial value:

He has interested the Technology Matrons in instituting a Nurses Aide program. This has been very successful and there is now a group of experienced women who can be called upon for help in case of a disaster or an epidemic. The program has had the hearty approval of the Nursing Service. In line with the above, an arrangement has been made with the Massachusetts General Hospital in case of a disaster or an epidemic. The hospital will take any patients Dr. Farnsworth wishes to send them on short notice, and also will send out a team of experienced doctors to aid in the work in the Infirmary, should that be necessary.

An interesting program in occupational medicine has been set up by Dr. Farnsworth with coverage of all of the personnel of the Institute. This is pioneer work and should minimize the occupational hazards met with in the various departments. As part of this program, a Safety Committee is being organized to cover these hazards geographically throughout the Institute, and a safety engineer has been authorized to implement the complete program. This whole matter is of great interest and it seemed to the Committee that it would be well if Dr. Farnsworth would carry out his suggestion of obtaining either one or more Fellows from some of the medical schools who would be carried on his staff. As far as we know, this would be a unique opportunity for the training of men in the field of occupational medicine. Work in an industrial plant will cover only one phase of this subject; at M.I.T. many phases can be covered.

More room is needed for expansion of the Department and that will be forthcoming as soon as the Hayden Library is completed. Your Committee feels that the Corporation and, in fact, all departments of the Institute may well be proud of the M.I.T. Medical Department.

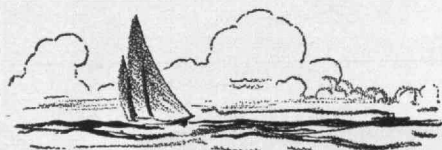
\* Members of this Committee for 1948-1949 are: Dr. William J. Mixer, '02, chairman, Samuel C. Prescott, '94, John R. Macomber, '97, Dr. James H. Means, '06, Dr. Egon E. Kattwinkel, '23, Dr. Arlie V. Bock, and J. Willard Hayden.

In the days when cattlemen drove their stock across the unfenced prairie to the railhead, it was common practice among the least scrupulous to feed the cattle plenty of salt before they were offered for sale. When they were allowed to drink their fill, the gain in weight was the buyer's loss. Hence the term "watered stock" sensationalized in early days of corporation revelations and regulations.



Print from  
Bettman  
Archive

# A Are you selling "WATERED STOCK?"



**WATER** is just about our commonest material. In many places it is indispensable; in some places it is beautiful; but in others it contributes nothing but extra weight and the risk of depreciation. To send a six-ounce orange North from Florida freight must be paid on over five ounces of water which the North has in abundance — and then it must be eaten quickly before it rots.

## BLOOD PLASMA

When World War II darkened the horizon Army doctors looked beyond the outright slaughter to the millions of wounded who might die in the field. Blood transfusion could save many but in a remote, devastated theater of war it was unthinkable — unless blood collected from a healthy population could be reduced, preserved, transported and reconstituted. To make this possible National Research Corporation took low temperature, high vacuum dehydration from the laboratory and developed it to the level of mass production.

## PENICILLIN

Faced with an urgent wartime need for a universal antiseptic the English recalled the experience of Alexander Fleming with the blue-green mold, *Penicillium Notatum*. Under pressure the wonder antibiotic was accumulated — enough for a mouse, enough for a man, enough for twenty men — and then, grown by "kitchen culture" in millions of milk bottles, enough for an army. Again there was need for dehydration without heat damage and National Research's high vacuum process now installed in substantially all of the larger plants throughout the world, turned penicillin into powder at a rate to supply the world.



## ORANGE JUICE

During the war we experimented with the dehydration of many common foods; meat, fish, vegetables, fruits, coffee. Of these orange juice was the most promising with a nationwide market ready and a world market waiting. We had produced citrus concentrate and powder on a pilot plant scale. Near the war's end we organized Vacuum Foods Corporation. For them we built and equipped a plant in Florida that now concentrates, for the national market, 75,000 gallons of juice a day.

This new industry, producing some 4½ million cans in the 1946-47 season

is expected to reach an annual production rate of 200 million in 1949. Within five years it is predicted that one-fourth of all Florida's oranges will reach their market as concentrated juice. In this industry Vacuum Foods is the pioneer and leader.

## COFFEE



The success story of orange juice will, we hope, be rewritten for coffee. For over a year we have been producing in small quantity a "crystalline coffee" — pure coffee essence, nothing more and *nothing less*. This small production is being market-tested through the local retail trade and a steadily increasing number of users have found out that coffee *can* be reduced to an instantly soluble concentrate, and still taste like good coffee.

## WHAT NEXT

To anyone who is selling "watered stock," not with guile but from necessity, National Research can offer a new prospect — lower cost methods of producing dry materials with instantaneously soluble structure. To apply our proven techniques of high vacuum dehydration National Research Corporation stands ready with a carefully chosen, experienced staff, with the newest equipment and with an accumulated knowledge of large scale low temperature dehydration that cannot be equalled anywhere.

INDUSTRIAL RESEARCH PROCESS DEVELOPMENT  
HIGH VACUUM ENGINEERING & EQUIPMENT  
Metallurgy — Dehydration — Distillation — Coating — Applied Physics

# NATIONAL RESEARCH CORPORATION

SEVENTY MEMORIAL DRIVE  CAMBRIDGE, MASSACHUSETTS

In the United Kingdom, BRITISH-AMERICAN RESEARCH, LTD., London S.W. 7, England — Glasgow S.W. 2, Scotland



## ALUMNI DAY, 1949 (Continued from page 576)

dining services, to assure effective centralized direction. These services are now valued at over \$5,000,000 and have more than \$1,500,000, as an annual operating budget. Mr. Baldwin's duties include administration of all undergraduate dormitories, the Senior House, Walker Memorial, the Graduate House, and the Women's Dormitory, as well as our housing project for married students, Westgate and Westgate West. He has had valuable experience which ideally qualifies him for his new post. We are happy to welcome him to M.I.T.

No institution is blessed with a stronger, more loyal, and more effective group of administrative officers than the Institute, and I wish to pay tribute to their skill and forbearance in easing your new president's adjustment to his new responsibilities. The administrative group, working in close concert with the Faculty, gives the Institute a unity and a harmony which are great sources of strength. I do not believe it would be possible to find a group of Faculty members and administrative officers more completely dedicated to scholarship or more loyal to the ideals of our free American society.

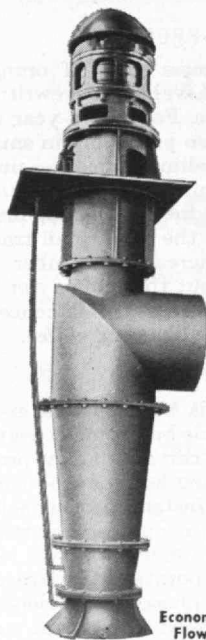
### Technology Alumni

Working in full concert with the administration, the staff, and the students stands our great body of Alumni. During the past year, we have had two examples of the strength and the loyalty of our alumni group. One is the response which Mr. Dalton has received in the organiza-

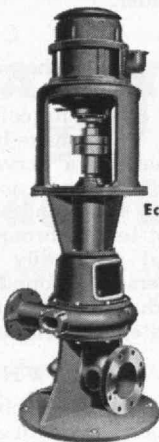
tion of our Development Program. Almost to a man, the Alumni who have been asked to take part in the organization have responded generously and with enthusiasm. The other example was the welling up of Technology spirit at the Mid-Century Convocation two months ago. One of the observations we most frequently heard about the Convocation from our guests from outside the M.I.T. family was that M.I.T. demonstrated extraordinary unity and coherence. All groups seemed to be working for a common purpose.

May I also express to the Alumni our appreciation for the continued generosity which so many Alumni are expressing through the Alumni Fund. Within a fortnight, the Alumni Fund Board has completed an appropriation of \$250,000 to the Institute to insure the completion of the Charles Hayden Memorial Library and, as you know, a year or more ago the Board allocated, out of its accumulated funds, \$500,000 to insure the completion of the Senior House. By this policy of supplementing other funds, the Alumni Fund is putting its resources to work in the most effective possible way and is lending a hand to the Institute where it is most needed.

And while speaking of our Alumni, let me cite an interesting report which was recently published in the journal, *Mechanical Engineering*, about the college antecedents of successful engineers. We have always known that M.I.T. Alumni are outstanding, but here is statistical evidence. A study of the college alumni listed in *Who's Who in Engineering*, as reported in this article, indicates that M.I.T. leads the list of the 362 institutions represented, with a total of 933 names. Not only does it head  
(Concluded on page 588)



Economy Axial Flow Pump



Economy Non-Clogging Sewage Pump

**ECONOMY PUMPING** makes sound sense to engineers who know the dollars and cents value of trouble-free pumping service. To pump longer, at lower cost, with less maintenance, rely on Economy Pumps.

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For complete details on any Economy Pump, write Dept. M-3 Please specify type pump in which you are interested.

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Division of Hamilton-Thomas Corp.  
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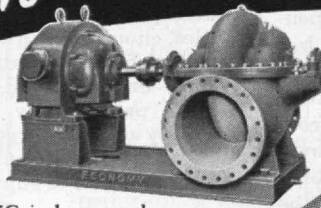


**Klipfel**

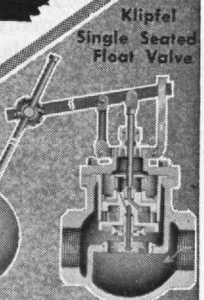
**MANUFACTURING COMPANY**

DIVISION OF HAMILTON-THOMAS CORP.  
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**...PUMPING WITH Economy!**



Economy Double Suction Pump



Klipfel Single Seated Float Valve

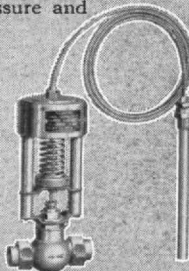
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**CLOSER REGULATION** ... more accurate control ... that's been the forty year service record of Klipfel Automatic Regulating Valves on installations throughout the land.

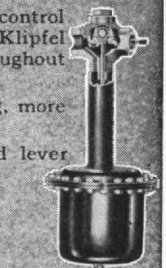
Klipfel exclusive design inner valves assure better closing, more dependable regulation.

Complete line includes pressure reducing valves, float and lever valves, thermostatic valves, back pressure and relief valves and pump governors.

For complete details on any Klipfel Valve, write Dept. M-3 Please specify type valve in which you are interested.



Klipfel Spring Loaded Thermostat



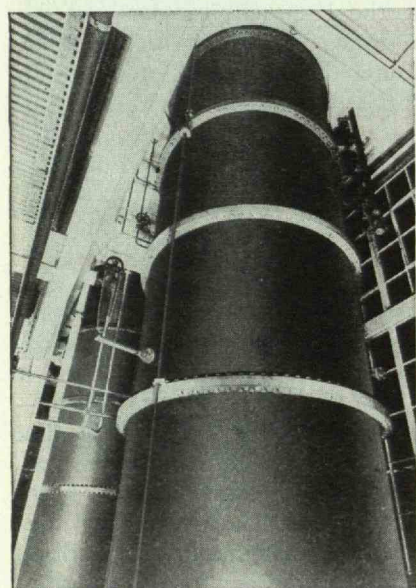
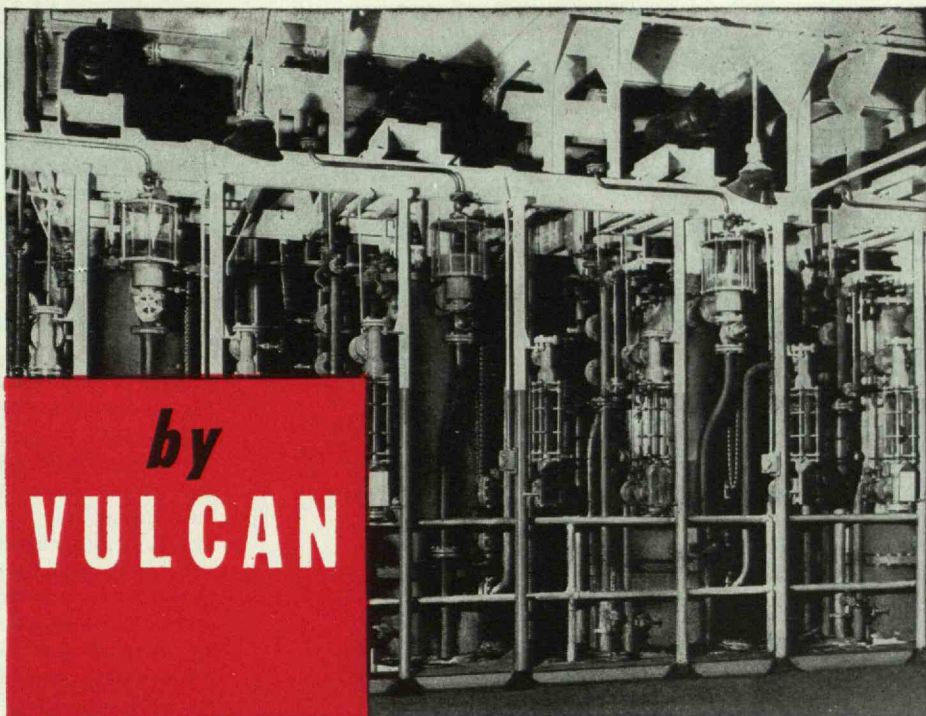
Klipfel Ball Type Reducing Valve



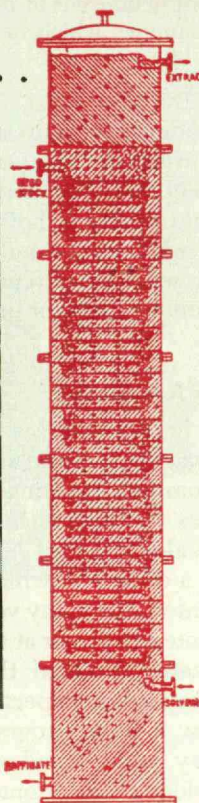
**solvent**

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*by*  
**VULCAN**



At right: Diagrammatic sketch of a liquid-liquid extraction column.



**EFFICIENT . . . EASY TO CLEAN . . . NO CHANNELING**

**T**HE Vulcan baffle-type liquid-liquid extractor consists of a vertical column packed with a series of horizontal baffles. The turbulent region at the edge of each baffle serves to remix the liquids between stages. Either phase may be the continuous phase. Each baffle is made horizontal and flat by the use of adjustable spacer posts.

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These extractors are available in all corrosion resistant materials and in diameters to ten feet.

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evaporation  
extraction  
processes and equipment**

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SAN FRANCISCO NEW YORK BUENOS AIRES

IN CANADA — VICKERS VULCAN PROCESS ENGINEERING COMPANY LTD. — MONTREAL



# HEVI DUTY

➤ **Precision Electric  
Heat Treat Furnaces**  
(Laboratory and Industrial)

➤ **Dry Type  
Air Cooled Transformers**  
(to 1000 KVA)

➤ **Constant Current  
Regulators** (Static Type)

➤ Hevi Duty Precision Electric Heat Treating furnaces are built in a large variety of types and sizes — for many heat treating operations — with temperature ranges to 2500° F (1371°C). They are standard production equipment in many national industrial plants.

➤ Hevi Duty Dry Type Air Cooled Transformers with or without tap changing switches as well as special transformers for special requirements.

➤ Hevi Duty Constant Current Regulator (Static Type) for series lighting. To transform constant potential to constant current, using a resonant circuit with patented exclusive features. A decided improvement over any other known type of regulator.

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Harold E. Koch '22 President

Elton E. Staples '26 District Mgr., Cleveland

## HEVI DUTY ELECTRIC COMPANY

### HEVI DUTY

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DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS  
MILWAUKEE 1, WISCONSIN

## ALUMNI DAY, 1949

(Concluded from page 586)

the list; it stands substantially ahead of the next competitor. Perhaps more significant is the fact that the percentage of living Alumni of the Institute who are listed in *Who's Who in Engineering* is higher than that of any other institution. The figure given would be substantially higher than it is if the number of living alumni used had been limited solely to our engineering graduates. Still another notable deduction to be drawn from this study is that two institutions, both privately endowed, furnished one-eighth of all the engineers listed in the 1948 volume of *Who's Who in Engineering*.\*

Here is evidence of the leadership of the privately endowed institution. Here is verification of what we have been saying in our Development Program that our privately supported institutions deserve the continued support of our free enterprise system. Here is evidence of the importance of our present objective in funding M.I.T.'s independence.

Such in rapid review are some of the evidences I would present to you that the Institute indeed has taken as its ideal Pasteur's law of peace, and work, and health. As an institution we are striving to make a maximum contribution toward the welfare of our nation and of mankind in working unremittingly not for new modes of destruction but to deliver man, as Pasteur said, from the calamities which beset him and to enlarge the frontiers of life.

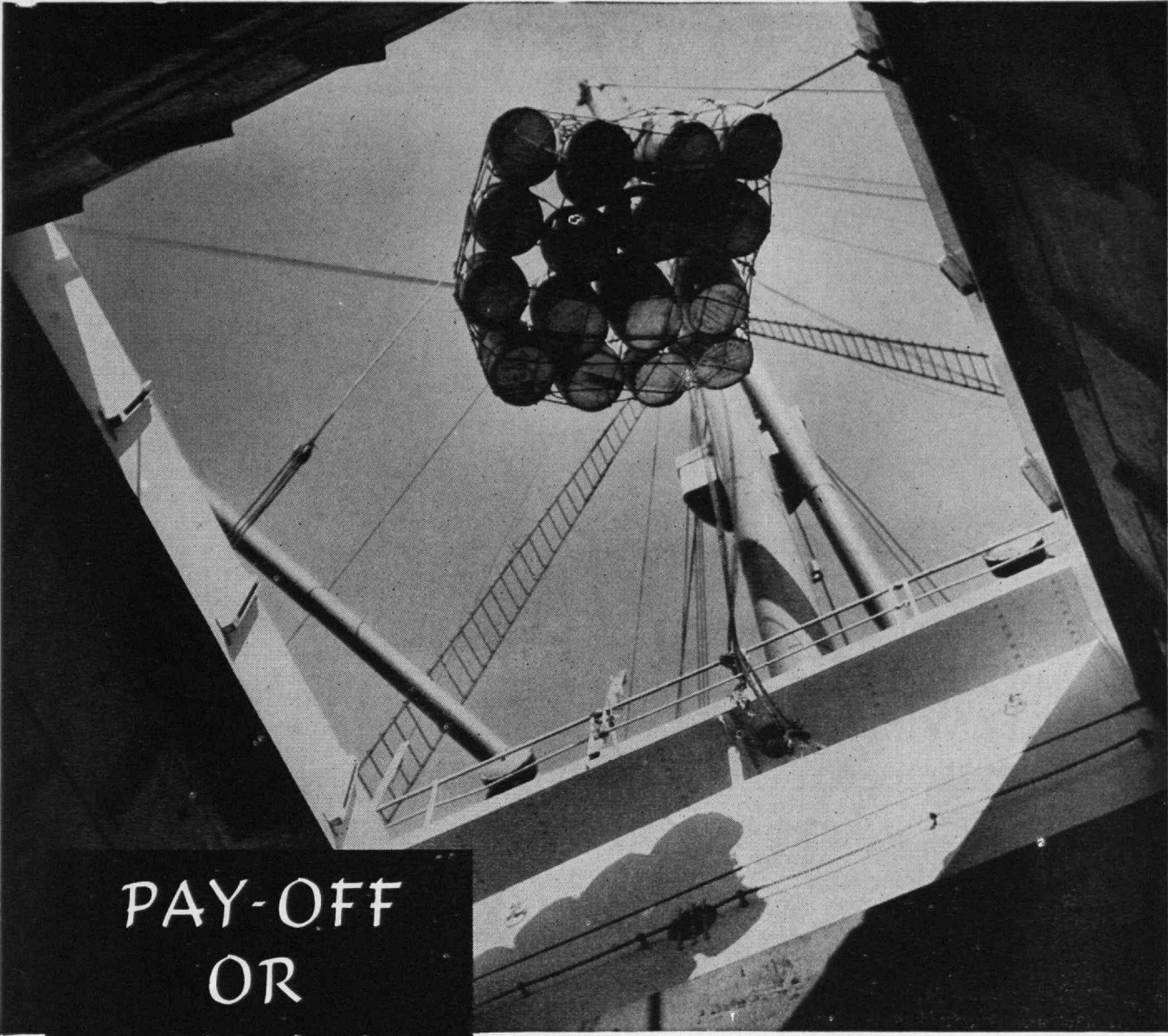
By 10:00 P.M., when President Killian had concluded his address, the banquet was declared adjourned by Mr. Dandrow. But although alumni day, 1949, was thus terminated, many an informal group got together in hotel rooms, or in the homes of Alumni residing in Greater Boston, for a continuation of one of those pleasant reunions which have done so much to stamp the seal of unity on Technology graduates.

### In Retrospect

In certain respects, this year's Alumni Day was unusual. It was the first one in many years at which Dr. Compton was unable to be present in person, and it was the first since 1930 at which a new president — an alumnus of the Institute — took part. It was the first in a decade at which no symposium papers were presented; the many very able addresses which were presented this year at the Convocation early in April adequately fulfilled the need customarily supplied by symposium papers. Those who came to Cambridge saw a huge program of construction already under way, and learned of other units to be added to Technology's educational facilities.

But Alumni Day, 1949, was also different in its look toward the future. There was an air of activity about the place; not the nervous, tense activity of the war years but rather the activity which marks the slow, steady, studied march forward in a new postwar era under a new leader. Not so new, however, was the same steadfastness of purpose which has characterized the Institute during its formative period under William Barton Rogers, through the Augustan age of Richard Cockburn Maclaurin, the Olympian age of Karl Taylor Compton, and now to the burgeoning era of James Rhyne Killian, Jr.

\* Additional details are given on page 555.



## PAY-OFF OR PAY OUT

Loading and unloading are the most critical moments in the life of your cargo. A parted rope would mean damaged cargo . . . a loss for shipper, carrier or consignee, instead of profit.

It takes durable cargo nets to stand up to the punishment received in handling heavy, sharp-edged crates and barrels. The constant pulling, bending and friction they have to withstand will

soon wear through any but the best.

Nets made of **PLYMOUTH SHIP BRAND MANILA Cargo Net Rope** are a standard for quality in ports around the world. The pure Manila fiber and skilled craftsmanship which goes into the manufacture of **SHIP BRAND** makes it unsurpassed for *durable strength*.

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1949—OUR 125th ANNIVERSARY YEAR



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On jobs like this, only the toughest portable power cables prove satisfactory. That's why **SIMPLEX-TIREX CABLES**, with their Selenium Neoprene Armor, are called for time and again.

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**SIMPLEX WIRE & CABLE CO.**  
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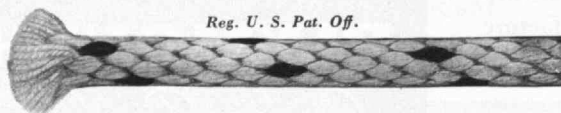
## Samson Cordage Works

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Manufacturers of braided cords of all kinds, including sash cord, clothes line, trolley cord, signal cord, shade cord, Venetian blind cord, awning lines, etc., also polished cotton twines and specialties.

### SPOT CORD

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Our extra quality sash cord, distinguished at a glance by our trade-mark, the colored spots. Especially well known as the most durable material for hanging windows, for which use it has been specified by architects for more than half a century.

## BRIDGES OF KNOWLEDGE

(Continued from page 566)

I have recently lost to the California Institute of Technology an outstanding professor of English Literature who will become their dean of humanities. I had held him against other competing offers but in Pasadena his office and his classroom will be in walking distance of the great Huntington Library, from whose treasures my friend has already drawn the substance of two books during earlier visits. The surroundings will be delightful and it would be hard to find a better man to work for than Dr. DuBridge. The set-up of courses and the teaching load are satisfactory, the administrative duties are not heavy, or at least they don't appear so from a distance. The one question that troubles me, as a friend and well-wisher, is the climate of opinion. My friend happens to be as brilliant a teacher as he is a scholar and he is adept in angling for the fish that is hard to catch. He and I know that mathematics and physics will have a prestige on the Pasadena campus that none of the humanities can match. But just how wide will be the gap that separates them. What bridges can be thrown across it? Will the traffic on them be one-way or two-way?

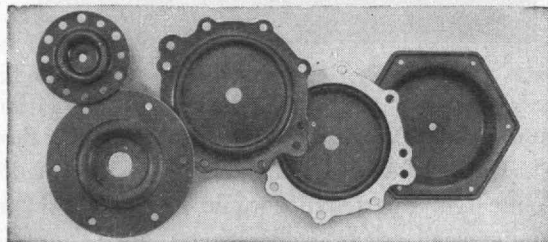
Here at M.I.T. you have excellent programs in many of the humanities and social sciences, you have a fine library, soon to be superbly housed, and access, three miles away, to one of the world's greatest libraries. In

(Concluded on page 592)

# RUBBER

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**DIAPHRAGMS.** We produce diaphragms of all types, with or without fabric insert, from the size of a dime up to three feet in diameter. Special stocks are compounded to resist various fluids, extremely high and low temperatures, continued flexing, or combinations of these requirements.

**ACUSHNET** invites problems involving the most meticulous specifications. Diaphragms are not stocked; made on special tools to order.

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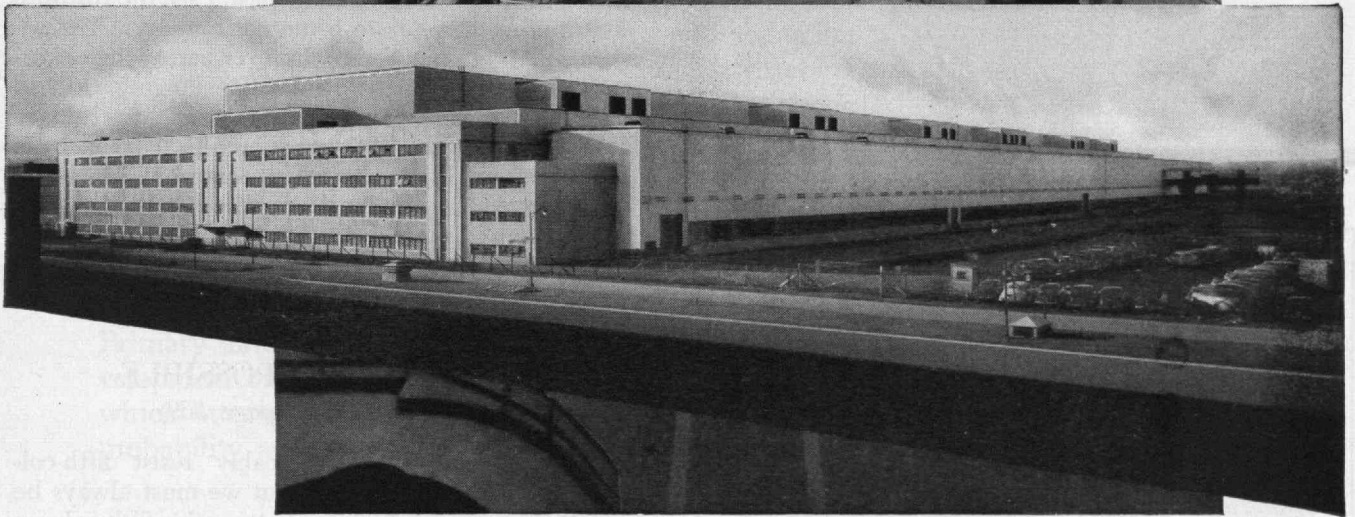
PROCESS COMPANY  
NEW BEDFORD, MASS., U. S. A.

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Address all correspondence to 774 Belleville Ave., New Bedford, Mass.

# THE WORLD'S LARGEST TURBINE PLANT

Interior of General Electric Turbine Building, Heavy Equipment Area.



To meet the growing power demands of industry, General Electric Company retained Stone & Webster Engineering Corporation to design and construct at Schenectady, New York, its new turbine manufacturing plant.

The building, which is 650 feet wide by 1290 feet long, has a total floor area of more than 1,000,000 square feet. It required

foundation construction of unusual design to carry the heavy loads to be superimposed on the manufacturing floor, which comprises nearly 20 acres.

This plant when in full production will be capable of producing each month enough turbine-generators to supply power and light for a city of a million inhabitants.



## STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INC.





# CO<sub>2</sub>

**GAS . . . LIQUID . . . SOLID (Dry Ice)**

**THE LIQUID CARBONIC CORPORATION**

3100 South Kedzie Avenue, Chicago 23, Illinois

**U. S. A.**

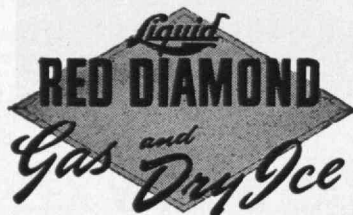
28 Producing Plants  
More than 50 Distributing Points

**CANADA**

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Colombia, Trinidad, Brazil



## BRIDGES OF KNOWLEDGE

(Concluded from page 590)

Cambridge and Boston combined, you have one of the intellectual capitals of the world, where your students can find great preaching, art, drama, and music, if they have time and inclination for them. Your administration favors a well-balanced program and your gifted Dean of Humanities, John E. Burchard, '23, will woo the students to these treasures of culture with the enthusiasm of a Pied Piper. For the success of the well-balanced program, so admirably sketched in his inaugural address, I hope and pray that President Killian will have the support of all hands, his Faculty and Governing Board, his Alumni, the parents, and the prospective employers of his undergraduates.

Although I knew precious little of science until I was 50, it fell to my lot in wartime to become the historian of the Office of Scientific Research and Development. In the course of my labors I came to know many of your professors, and of your Alumni, and to have an immense respect for them. I do not know all of M.I.T.'s contributions to the winning of World War II, but I know enough to say that no educational institution did more. But on a commencement morning one looks to the future, not the past. I see the Institute contributing in years to come not merely in the advancement of knowledge in ever-narrowing, ever-multiplying specialized fields, but flinging bridges across the gulfs that separate these fields: bridges with two-way traffic that bring both to your students and to the world, not merely specialized knowledge but integrated knowledge. For general and specialized education are not hostile but complementary, one and inseparable, now and forever.

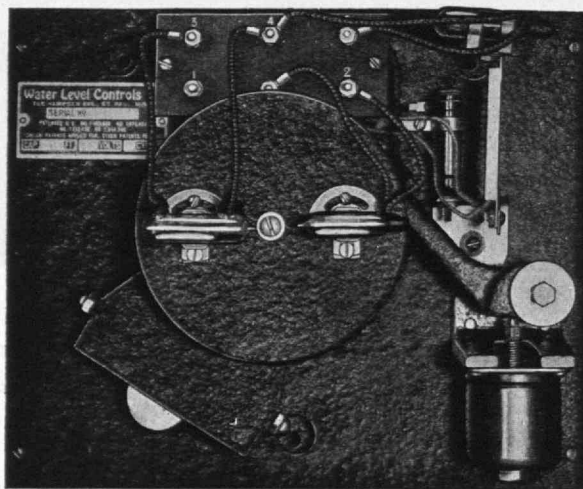
## DOING THE IMPOSSIBLE

(Continued from page 569)

Certainly we must implacably resist fifth-column danger to our freedom but we must always be sure that our methods of combatting this fifth column do not irreparably damage our basic liberties. Our strength and stability lie not in a vain effort to impose an intellectual embargo on Communism or in insulating our young people from the ideological conflicts of the day, but rather in diligently demonstrating, day in and day out, our deep and abiding faith in our free society and in its capacity for self-improvement. As Winston Churchill said at the Mid-Century Convocation, "If . . . there is to be a war of nerves let us make sure our nerves are strong and are fortified by the deepest convictions of our hearts. If we persevere steadfastly together, and allow no appeasement of tyranny and wrongdoing in any form, it may not be our nerve or the structure of our civilization which will break and peace may yet be preserved."

And so I would say to you that the world into which you graduate today is no place for fearsome and frustrated men. It is a place for men who are ready to meet unflinchingly the shock waves that accompany a cold war, men who are tough-minded and stouthearted be-

(Concluded on page 594)



## ROTO-TROL Type "A"

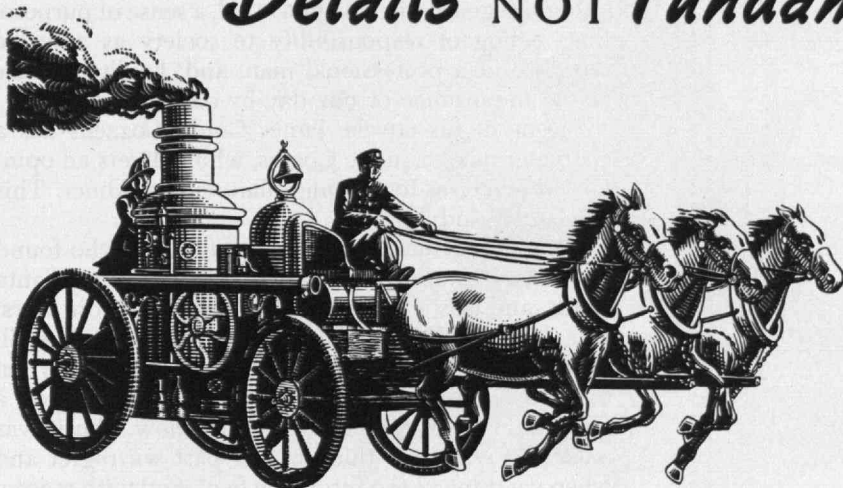
Type "A" operates from the pressure in the pump discharge line, at the pump house. Electric time delay prevents starting and stopping due to surges. Deep well turbines are protected from backspin. Type "A" Multi-Pump Roto-trol operates two or more pumps discharging into the same pipe. Time delay adjustments compensate for additional friction and surges when the second pump starts or stops.

**WRITE  
for  
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**Water Level Controls Division of  
HEALY-RUFF COMPANY**  
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# THROUGH THE YEARS

## *Details* NOT *Fundamentals* CHANGE



Through the years the powers of fire and explosion have lost none of their destructive and far-reaching effects. Only the knowledge of how to hold these gigantic forces at bay has changed with the passing of time.

Fire and steam are among man's most useful servants, but only in direct proportion to the effectiveness of his accident prevention abilities and loss control techniques.

Primary among our means of control has been the development of an inspection service and insurance system which attacks losses before they occur, minimizing their probability and compensating for their effects.



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## BANKING CONNECTIONS

WHILE we are, of course, constantly looking for new business of the right kind, it is never our intention to disturb satisfactory relations elsewhere. If, however, any change or increase in banking connections is contemplated, we would like very much to be kept in mind. We welcome opportunities to discuss banking or trust matters at any time.

### State Street Trust Company

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\* Main Office:

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\* Massachusetts Ave. Office:

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\*Night Depository service available

MEMBER FEDERAL RESERVE SYSTEM

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

## DOING THE IMPOSSIBLE

(Concluded from page 592)

cause they are fortified by their deepest convictions.

Neither is it a place for men who are hamstrung by cynicism, that jaded sense of indifference which restricts so many people. If you have a sense of adventure, you have the best safeguard against cynicism. Other safeguards are an open mind, a sense of purpose, that feeling of responsibility to society as a prime requisite of a professional man, and, finally, a sense of the importance of our day-by-day activities.

In one of his novels, James Gould Cozzens has a character named Judge Coates, who delivers an opinion on cynicism to a young man named Abner. This is what he said:

"Don't be cynical. A cynic is just a man who found out when he was about ten that there wasn't any Santa Claus, and he's still upset. Yes, there'll be more wars; . . . I don't doubt. There always have been. There'll be deaths and disappointments and failures. When they come, you meet them. Nobody promises you a good time or an easy time. I don't know who it was who said when we think of the past we regret and when we think of the future we fear. And with reason. But no bets are off. There is the present to think of, and as long as you live there always will be. In the present, every day is a miracle. The world gets up in the morning and is fed and goes to work, and in the evening it comes home and is fed again and perhaps has a little amusement and goes to sleep. To make that possible, so much has to be done by so many people that, on the face of it, it is impossible. Well, every day we do it; and every day . . . we're going to have to go on doing it as well as we can."

When Judge Coates finished, young Abner asked, "What do you want of me?"

"We just want you to do the impossible," Judge Coates said.

And so I would say to the Class of 1949, we just want you to do the impossible. If you can acquire this stabilizing sense of the importance of everyday duties, then you can tackle the troubled world, not with fear but with an abiding faith in the importance of life. If to this you can add the spirit of adventure, then you have the ingredients for a life, not of low prudence but of high accomplishment and enduring satisfactions.

In bidding you Godspeed, this is the kind of life I hope for each of you, as you explore the exciting world beyond the transonic barrier.

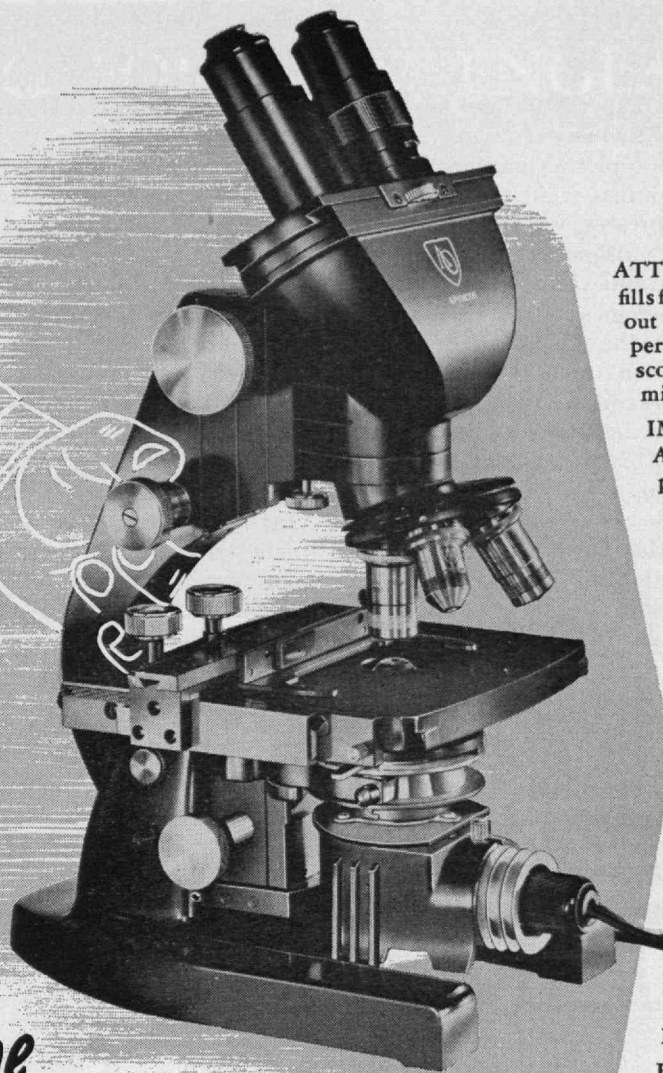


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## HIGH TIDE OF CONFIDENCE

(Continued from page 561)

"Shafting and its Fittings"; and "Paper Mills and Machinery." The list of drawings of this Department was comprehensive and treated such topics as marine and stationary boilers, the Harris Corliss engine, marine and pumping engines, cranes, presses, water motors, turbines and breast wheels, screw propellers, machine tools, steam hammers, derricks, and various types of gears. The list included 413 drawings and tracings.

Two theses were shown for the Department of Architecture: "A Railroad Station upon a Bridge"; and a "Reservoir and Waterworks in a Park." In this Department's exhibit the 77 drawings in 60 frames included several copies from the *École des Beaux-Arts*; a porch campanile, a billiard room, boathouse, and a farm barn.

The six theses in Mining and Metallurgy were titled: "The Newburyport Silver Lead Mine"; "The Richmond Blast Furnace"; "The Vershire Vermont Copper Mine and Ore"; "The Port Henry Iron Foundry"; "The Metallurgical Treatment of an Argentiferous Galena, from Burleigh Tunnel, Colorado"; and "The Pomeroy Ironworks, West Stockbridge, Mass." There were sketches of the mining and the metallurgical laboratories; an exhibit of a novel ore dresser, and another of the mining machinery at M.I.T., with samples of products in both cases also included in this exhibit.

The theses exhibited by the Department of Chemistry were entitled: "Anthracene, a Coal Tar Product";

"The Action of Chloride of Sulphur upon Spirits of Turpentine"; "The Action of Tungstic Acid upon Gelatin"; "A Practical Estimation of the Value of Tanning Materials"; and "The Determination of Oxygen in Organic Bodies."

Three theses were shown for the Department of Physics: "The Atomic Theory as Applied to Gases, with Some Experiments on the Viscosity of Air"; "New Experiments in Sound"; and "On the Mean Specific Gravity of the Earth." The experiments, inventions, and descriptive data from this Department were impressively presented: Results of experiments made by students on saving heat by different ways of covering steam pipes were treated, and experiments with a spherometer; on polarized light; and on methods of estimating fractions of units were also prominently displayed. A polarimeter, wind vane, balance, mountain stadia, cosine galvanometer, daylight photometer, plane table, and a "cheap and accurate" dividing engine were listed under the heading of "Novelties and Inventions."

From the Department of Natural History there were theses on: "Geology of Eastern Massachusetts"; and a "Catalogue of the Alcidae contained in the Museum of the Boston Society of Natural History, with a Review and Proposed Classification of the Family."

The Department of Science and Literature had three theses: "The Kingdom of Italy"; "The Times of Edward the Third"; and "The British Province of Australia."

(Continued on page 598)

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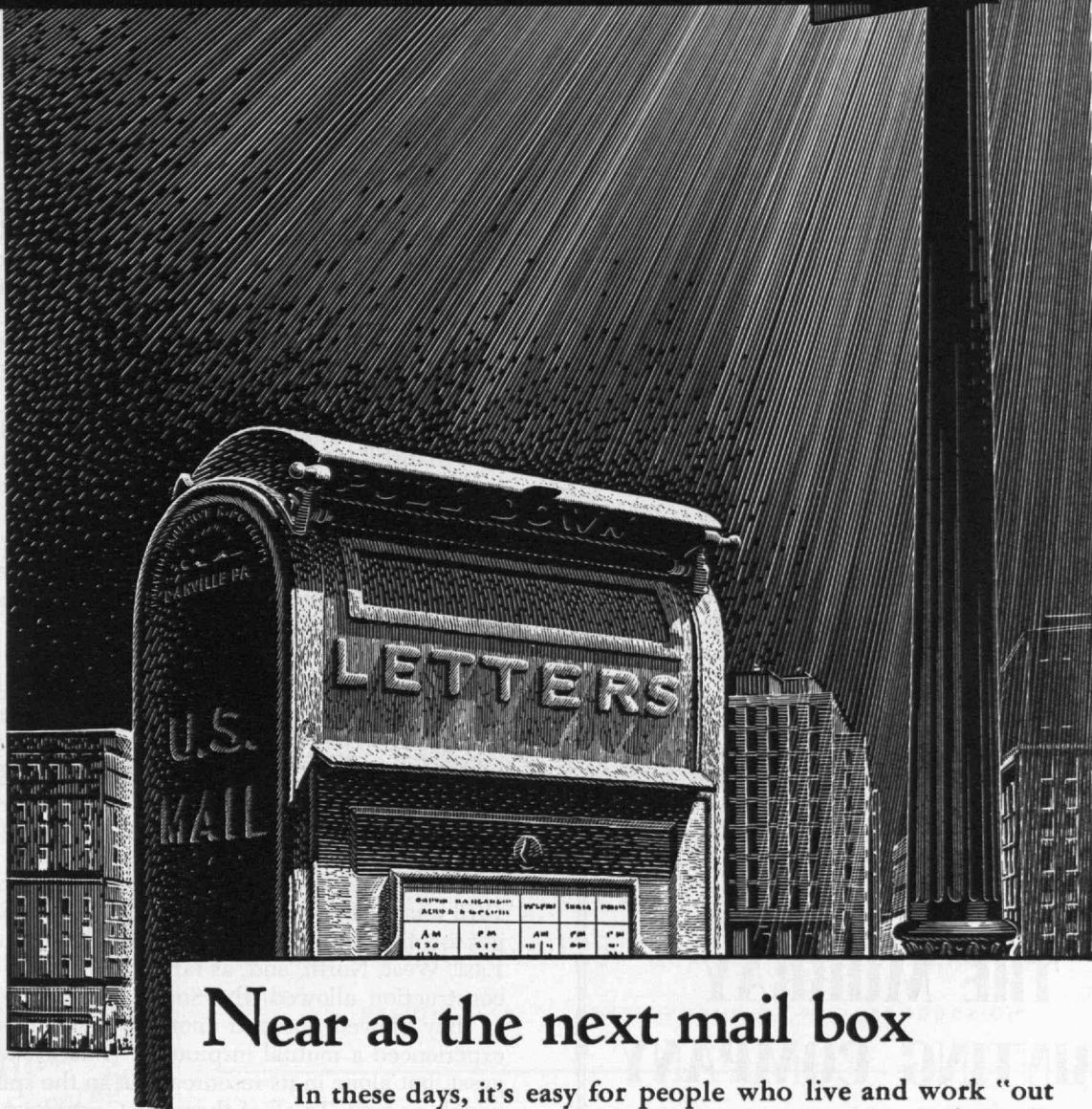
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## HIGH TIDE OF CONFIDENCE

*(Continued from page 596)*

Theses from the Department of Philosophy were: "Kant's Aesthetic: A Restatement of it, with some Critical Queries"; and "Historical and Logical Relations between Fichte and Kant."

Eight years had elapsed since M.I.T. had sent out its first graduating class in 1868. The earlier sections of this article, which describe exhibits from the wide field of American industry in the Centennial Exposition, may well be compared with those listed in the immediately preceding paragraphs which tell of the manner in which M.I.T. was meeting the demands of the country's advance in the audaciously virile spirit of post-Civil War industrialists. That M.I.T. had become a going concern is apparent. The Alumni of nearly three-quarters of a century since can profitably review the accuracy of the founders as to what constitutes the high datum of academic ideals — how best to instill into the mind of the student the craving for the knowledge of pure science and its practical application. The described theses, drawings, experiments, and inventions are sufficient evidence that M.I.T. students of the Centennial year were on the job. They had absorbed the scientific knowledge and were eager to apply it practically.

We may be sure that no M.I.T. graduate was deceived by the famous Keely motor, a perpetual motion affair which greeted the public two years before the Centennial Exposition, and the fraudulent claims for which kept up for years. Then, as now, a lag existed between the common knowledge of scientists, and the average man's knowledge of scientific principles and their application.

History tells us that the Centennial Exposition of 1876 was the first occasion when all American sections got together to display their products and future aims. East, West, North, and, as far as the trials of the Reconstruction allowed, the South, foregathered, and, as they viewed one and another's accomplishments, experienced a mutual inspiration. America was truly great, not alone in its resources but in the spirit of its people as well. To all of them the Centennial was the ultimate climax of a century of progress. Today when we can review the vastly increased velocity of progress which has since taken place, we realize that the Centennial was merely a landmark, albeit one of portentous significance.

*(Concluded on page 600)*

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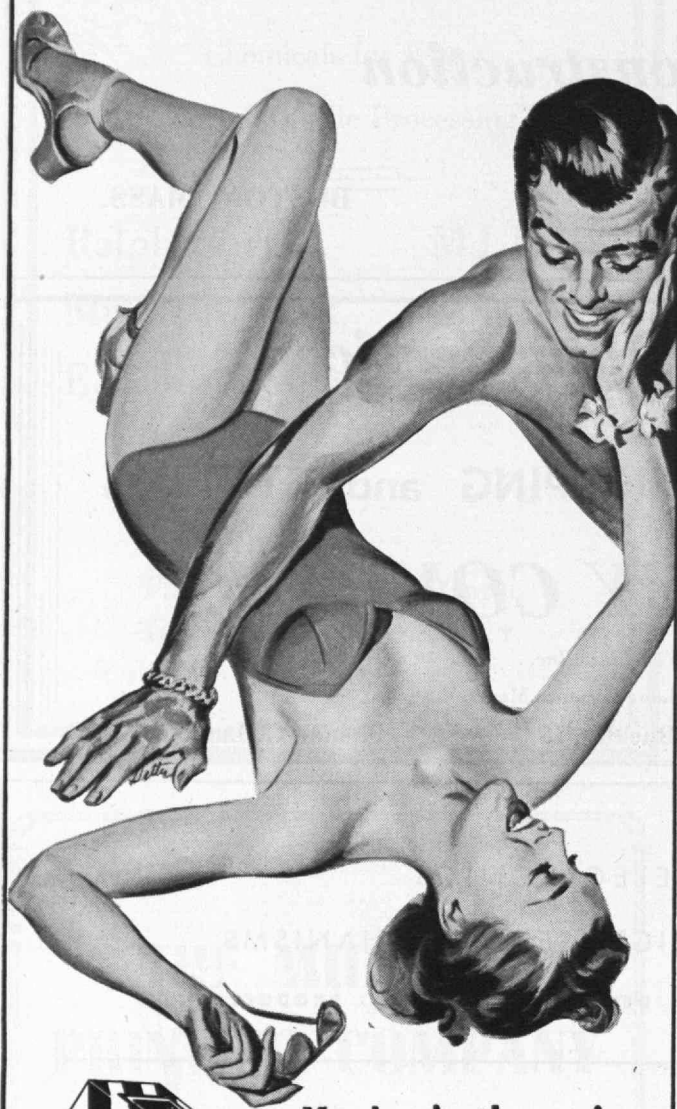
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## HIGH TIDE OF CONFIDENCE

(Concluded from page 598)

The times were not without men of vision who questioned the *ultimate* future, however. With an ominous note, strangely modern in its tone, young Henry Adams<sup>12</sup> wrote: "I tell you these are great times. Man has mounted science and is now run away with. I firmly believe that before many centuries more, science will be the master of man. The engines he will have invented will be beyond his strength to control. Some day science may have the existence of mankind in its power, and the human race commit suicide by blowing up the world."

More often the prevailing tone, however, was enthusiastically optimistic. In the tiresomely phrased encomiums of the ultraliterate writers of the day, and in the shrewdly practical stories of its great writer, Mark Twain, a common strain predominates. Incredible surprise would have greeted any doubter of the one point upon which all Americans agreed in 1876. They all believed in the success of the American Democracy, and had faith that a nation "of the people, by the people, for the people" offered greater opportunities for personal freedom<sup>13</sup> than any other form of society which man had been able to devise.

Our grandfathers were alert as they assembled or viewed with shrewd appreciation the 1876 evidences of American enterprise. They exhibited to the full the underlying confidence in the success of American Democracy which all accounts of the Exposition reveal. Would he not be an indignant man of 1876, if by some miracle, he should return to the land of the living, as he would contrast his own high confidence with our present social and political uncertainties which modern science and technology seem to have brought about? Exercising the privilege due to a reincarnated person, would he not strongly advise the man of 1949 to exhibit the very same confidence in one's own nation, and especially in the personal initiative and individual enterprise which marked the Centennial of 1876 as the high tide of American confidence?

<sup>12</sup> Sandburg, *Opus* cited.

<sup>13</sup> In fairness to the present generation, we must realize the great extent of American resources in the year 1876, compared with their greatly depleted present state. In fairness to those of 1876, we must agree that the tools of development of the resources were then greatly inferior. They were contemporary to the candle of President Abraham Lincoln, the runaway horse of President Andrew Johnson. There is food for much modern thought in these realizations, as we of today thumb, albeit a little gingerly, our most potent modern tool: atomic energy.

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## THIS RIVER CALLED LIFE

(Continued from page 562)

would say in Latin. Holstrom soon found he could discard certain items of his equipment which had no relation to his needs on the journey. By discarding the nonessentials, Holstrom was able to give better attention to those matters of real importance.

Fifth, he found that his rest each night by the side of the river gave him a chance to look up at the stars and catch sight of another world beyond and above his immediate task. This quiet repose at the day's end gave Holstrom the strength and courage he needed.

It seems to me that this story of Holstrom and the Colorado is a parable of the way you and I will best be able to face this river called life from day to day.

As Holstrom built his own boat to meet his own requirements after studying the strength and weakness of the designs of others, so we shall build our own faith for our travel on the river of life. And here I should like to admonish you on the need for making your own faith and testing it. You will want to study the faiths which others have found useful, and I recommend that you adopt from them whatever you find to have value. In your studies, you will, of course, examine the faiths of your father and grandfathers and you may wish to make their faiths your own. There can be no objection to adopting the faith of another if, upon careful examination and testing, you find it to meet the test of your own needs. But until you make a great conviction your own, an adopted faith is of little use to you, no matter how well it has served others. Whatever your religion, make sure that it is yours by experience and conviction.

As he used and tested his craft in nearby waters, so by doing well the daily work at hand we will find ourselves prepared for our life's great work. Lincoln said, "I will get ready, and my chance will come," and history teaches us how thoroughly he was prepared for the great test of his life. In the small and larger decisions you make every day, you will have the chance to develop skill and character, competence and patience, all of which will make you ready for the great day of decision which every man faces sooner or later.

Perhaps the most important point of all is that we need to know when to go with the prevailing current of opinion and when to go against it. There are two equal dangers here. One is the danger of always going with the current in spineless acquiescence. The other is the danger of being in opposition to almost any good proposal. Neither position is that which a mature person would be expected to take. There are three drifts, at present, we ought to work against.

One is the drift of millions of people to expect "the government" to perform almost all public and personal services for them and for their children. I live in Washington and have good opportunity to see the meeting of those forces which seek to gain from "overhead" many of the privileges and benefits which come at best from individual and group initiative outside of government. We should remember that the government can give nothing to its citizens which our people do not first produce themselves. We must also never lose sight of the fact that to look to others to do for us

(Concluded on page 604)



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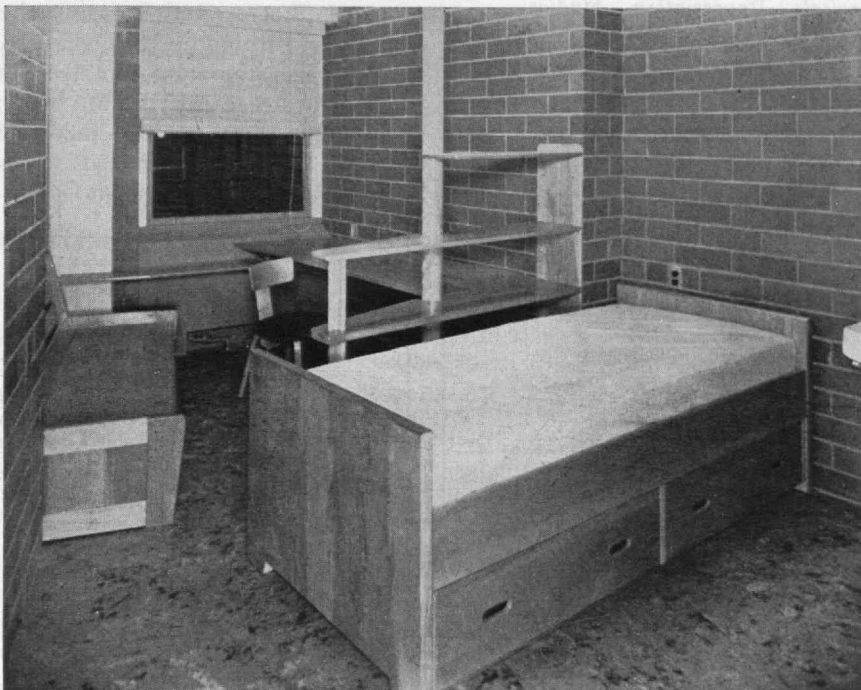
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## THIS RIVER CALLED LIFE

(Concluded from page 602)

those things which are our own duty and privilege means that we must ultimately rob ourselves of that moral fiber which has made this nation great.

The second drift that I believe needs to be opposed is the apparent drift toward war. Again in Washington I see the almost universal acceptance of the idea that such war is inevitable. This must not be. The common people of every country have everything to lose by war in an atomic age. War must not again happen.

As a third drift to be avoided, I would mention that tendency of labeling liberal-thinking persons as "fellow traveler" merely because their ideas may run counter to the popular stream.

The fourth point of Holstrom's Colorado journey was his elimination of excess baggage. So, too, we must learn what to discard from our minds as nonessential and what deserves our attention. The impact of reading material has multiplied a thousandfold. What not to read is as important as what we do read. Much the same could be said of radio and television programs. Endless stimuli make their impacts upon eye and ear and conscience. Only that spirit which knows what to take, and what to let go, can be adequate to meet the need of modern life.

Finally, we must make room for the lifting of our spirits toward a better world. An awareness of the higher life beyond our immediate experience is as necessary to us on our river of life as it was to Holstrom on the Colorado when he took his night's rest.

Amiel expresses this need of "otherness" when he says, "Let mystery have its place in you; do not be always turning up your whole soil with the plowshare of self-examination, but leave a little fallow corner in your heart ready for any seed the winds may bring, and reserve a nook of shadow for the passing bird; keep a place in your heart for the unexpected guests, an altar for the unknown God."

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# The M. I. T. Alumni Fund

## PROGRESS REPORT

As summer begins, the annual Alumni Fund is well advanced into its tenth year. It seems opportune, then, to make a report of progress to date. By early June 5,000 Alumni had contributed a total of almost \$80,000. In numbers that was some three hundred ahead of last year at the same time; in amount, about \$2,000. This is an encouraging start, but let us not forget, it is only a start. There are still 33,000 and more Alumni who have not yet responded!

The annual report for the ninth year listed the accomplishments of the Fund to date. It has shared importantly in two of the most forward-looking projects undertaken by the Institute in recent years, the new dormitory and the Charles Hayden Memorial Library. Those who returned for Alumni Day on June 11 visited the dormitory and were present at its formal opening. They also inspected the library, still under construction. To have had a part in the realization of these two vitally needed facilities gave a distinct feeling of satisfaction which was expressed by many.

We have done well. In nine years we have given three quarters of a million dollars to two major projects, lesser amounts to others. Yet, for comparison, last year's alumni fund at Harvard totaled more than a half million dollars for the construction of the new Lamont Library, one year of a three-year program. We *could* do as well if only each one of us would consider it his personal opportunity.

You who read this page have contributed before. If you are counted among the 5,000 who have already given this year, splendid! You have helped us get off to a good beginning. But if you have not contributed as yet, why not do it now? And if each of you who has shown his realization of the need would convince one other Alumnus, our fund would have a truly record year.



# Alumni AND Officers IN THE News

## In Print

ERNST A. GUILLEMIN'24, Professor of Electrical Communications, Department of Electrical Engineering, contributed the article, "Synthesis of RC-Networks" to the April, 1949, issue of the *Journal of Mathematics and Physics*.

HOYT C. HOTTEL'24, Professor of Fuel Engineering and Director of the Fuels Research Laboratory, GLENN C. WILLIAMS'42, Associate Professor of Chemical Engineering, and CHARLES N. SATTERFIELD'43, Assistant Professor of Chemical Engineering, are the coauthors of the two-volume book, *Thermodynamic Charts for Combustion Processes*. John Wiley and Sons, Inc. 1949.

VINCENT E. LYSAGHT'24 is the author of *Indentation Hardness Testing*, published by the Reinhold Publishing Company. 1949.

PARRY MOON'27 and DOMINA E. SPENCER'39 are the coauthors of an article entitled, "The Dimensions of Physical Concepts" which was published in the May, 1949, issue of the *American Journal of Physics*.

JOHN A. HRONES'34, Professor of Mechanical Engineering, is the author of "Key Factors in Cam Design and Application," Parts I and II, which appeared in the April and May, 1949, issues, respectively, of *Machine Design*.

J. RAND McNALLY, JR.'41 wrote "A Preliminary Investigation of the Spectra of Uranium Isotopes" published in the April, 1949, issue of the *Journal of the Optical Society of America*.

ROBLEY D. EVANS, Staff, Professor of Physics, contributed "Quantitative Inferences Concerning the Genetic Effects of Radiation on Human Beings" to the March 25, 1949, issue of *Science*.

DANA L. FARNSWORTH, Staff, is the author of "Psychotherapy in a College Health Center" which was read at the 26th annual meeting of the American Student Health Association in 1948 and reprinted in the February, 1949, issue of *The Journal-Lancet*, Volume LXIX, Number 2. Dr. Farnsworth is also the author of a paper entitled, "Possibilities of Professional Consultation" read at the boys' day school section of the 23d annual conference of the Secondary Education Board in March, 1949, and printed in the May, 1949, issue of *The Independent School Bulletin*.

The following papers were presented at the technical program of the American Institute of Electrical Engineers' summer general meeting which was held at Swampscott, Mass., June 20 through June 24, 1949: EDWARD L. MORELAND'07, Executive Vice-president of M.I.T., "What the Accrediting Visitor Sees"; PHILIP L. ALGER'15 and J. J. Smith, "A Deriva-

tion of Heaviside's Operational Calculus Based on the Generalized Functions of Schwartz"; MURRAY F. GARDNER'24, Professor of Electrical Engineering, "History of Co-ordination of Operational and Transform Methods"; WILLIAM SHOCKLEY'36, "Theory of Transistor Action"; EMIL DE AGAZIO'47, "Some Electronic Aids to the Nuclear Physicist"; SAMUEL LEVIN'48, "Problems in Health Physics Instrumentation"; RICHARD C. LORD, Staff, Director of the M.I.T. Spectroscopy Laboratory, "The Basic Optics of Infrared Radiation."

## Interesting Miscellany

LOUIS S. MORSE'96 was elected on May 27 as the first honorary member of the Air Conditioning and Refrigerating Association. This honor is accorded to those "who have brought unusual credit to the industry."

ARTHUR C. HARDY'18, Professor of Optics and Photography in the Physics Department of the Institute, was one of a panel of experts who discussed new developments in the graphic arts before the annual conference of the International Association of Printing House Craftsmen on May 14.

JOHN H. SCHAEFER'26 was elected president of Industrial Research Institute, Inc., at its annual meeting which was held May 23 through May 25.

ROYAL WELLER'27 has been named chief scientist at Point Mugu, Calif., the Navy's largest test center for guided missiles. Dr. Weller's appointment to this important scientific position was announced on May 12.

C. FAYETTE TAYLOR'29, Professor of Automotive Engineering, Department of Mechanical Engineering, was invited by the American-Swiss Foundation for Scientific Exchange, Inc., to lecture at various technical schools and universities in Switzerland during the month of June. Professor Taylor's subject was "Recent Research in the Field of Internal Combustion Engines," based on work which has been done in the Sloan Laboratory at M.I.T.

BERNARD F. GREENE'40 was the speaker at a meeting of the New York section of the Illuminating Engineering Society on May 19. Mr. Greene's subject was "Planned Daylighting for Buildings."

SANFORD E. GLICK'41 was the speaker at the annual meeting of the Worcester section of the American Society of Mechanical Engineers on May 19 at the Worcester Polytechnic Institute.

New fellows named by the American Academy of Arts and Sciences and announced on May 12 include: JOHN W. FARLEY'98; JOHN T. NORTON'18, Professor of the Physics of Metals, Department of Metallurgy; EDWARD L. COCHRANE'20, Head of the Department of Naval Archi-

ture and Marine Engineering; HUGH E. MCKINSTRY'21; NATHANIEL H. FRANK'23, Professor of Physics; EDWARD S. TAYLOR'24, Professor of Aircraft Engines, Department of Aeronautical Engineering; C. FAYETTE TAYLOR'29, Professor of Automotive Engineering, Department of Mechanical Engineering; JAMES B. FISK'31; HSUE-SHEN TSIEH'36, Professor of Aerodynamics, Department of Aeronautical Engineering; CLIFFORD FRONDEL'39; WITOLD HUREWICZ, Staff, Professor of Mathematics; ARTHUR T. IFFEN, Staff, Professor of Hydraulics, Department of Civil and Sanitary Engineering; HANS MUELLER, Staff, Professor of Physics; JERROLD R. ZACHARIAS, Staff, Professor of Physics; and PHILLIPS KETCHUM, former member of the M.I.T. Corporation.

## Obituary

CHARLES N. PALMER'92, in July, 1948.  
WILLIAM T. BARNES'93, May 13.\*  
OSCAR R. COUCH'94, August 21, 1948.\*  
LEON K. DAVIS'94, November 10, 1948.\*  
TAKATERU KUKI'94, in September, 1948.\*  
GEORGE L. BLAKESLEE'96, December 15, 1947.\*

RICHARD F. MORGAN'96, April 4.\*  
HENRY M. DEAVITT'97, May 4.\*  
ANNA HICKS BRACKETT'98, date unknown.  
HENRY R. GILSON'01, December 30, 1948.\*

RALPH S. LORING'01, May 15, 1948.\*  
ROLAND H. CAMP'03, August 15, 1948.\*  
FRANK R. FARNHAM'03, in 1945.  
MONTAGUE FERRY'03, April 11.\*  
WILLIAM E. STANHOPE'03, December 5, 1948.\*

JAMES W. COBB'04, in September, 1939.  
WILLIAM F. GOODWIN'04, December 5, 1948.

JAMES R. BANCROFT'09, May 7.\*  
FRANCIS G. BELIVEAU'09, March 26.\*  
THOMAS A. DUTCHER'13, June 5, 1948.  
EDMUND J. REARDON'14, in April.  
REUBEN BURTON'15, March 18.\*  
GERALD B. ROBISON'15, February 22, 1948.\*

WILL P. WATSON'15, December 20, 1948.\*

WILLIAM E. COFFIN'16, March 31.\*  
JOHN B. PETERSON'17, March 24.\*  
SAMUEL N. HEYMAN'19, April 23, 1948.\*  
JAMES HAYS'21, September 14, 1948.  
GORDON T. WILLIAMS'23, September 19, 1948.\*

GASTON A. CONKLIN'25, March 4.\*  
DAVID INGLE, JR.'28, March 17.  
CHARLES C. LADD, JR.'30, May 6.\*  
DARRALL S. PARSONS'30, May 28, 1946.\*  
ROY E. CARLSON'31, March 28.  
CLARENCE H. WILLIAMS'32, March 10.  
STEPHEN M. SPRAGENS'33, November 16, 1948.

BERNARD C. RIDDELL'38, March 20.\*  
WILLIAM M. HUTSON'40, December 12, 1947.

\* Mentioned in class notes.

# News FROM THE Clubs AND Classes

## CLUB NOTES

### *M.I.T. Club of Buffalo*

Approximately 50 members of the Club attended the spring dinner meeting held at the University Club in Buffalo on the evening of May 5. The Club had as its guest and speaker Leicester F. Hamilton, Professor of Chemistry at the Institute. Professor Hamilton is very well known to many of the Buffalo group and received an enthusiastic welcome. In his talk he spoke of recent events at M.I.T. and of the many additions by way of buildings and activities. Since this particular session was also the Club's annual business meeting, the following new members were elected to the board of directors: Anton E. Hittl '36, Vladimir Hwoschinsky '40, Warren Miller '45, and Roswell E. Pfohl '17. In addition to these four new directors, the following five directors remain on the board from last year and they will continue to serve for the coming year: Walter W. Bird '34, Matthew N. Hayes '36, Gabe Hilton '15, James F. Patterson '36, and Walter H. Sherry '37.

Among those who were present at the May 5 meeting were: Robert M. Atwater '39, Ralph Bates '14, Herbert Beier '15, Carl Bernhardt '28, John D. Bowman '20, Howard Britton '38, Benjamin Buerk '30, Carl Bunker, Jr. '32, George J. Chambers '12, William O. Christy '17, Richard E. Dow '01, George Duryea '17, George J. Easter '15, Melville Ehrlich '33, Joseph Engel '37, Edgar Faelten '38, Whitworth Ferguson '22, John M. Gaines '26, John M. Hendrich '42, Philip Kron '34, Christian Kurtzmann '09, Harold D. Mitchell '12, Carl Newman '47, Leslie Powers '23, Nelson Stone '15, Horace G. Swan '18, Russell Thayer '32, Harold Towend '23 and Ehrler Wagner '37. — MATTHEW N. HAYES '36, Secretary, 45 Manchester Place, Buffalo, N.Y.

### *The M.I.T. Club of Cuba*

Since last August, when this two-year-old Club sent its first news report of alumni activity, we have had two enjoyable dinner meetings. December 8, 1948, was the date of the first of these reunions. Because our Club President, Antonio H. Rodriguez '21 was ill at that time, our Vice-president, Miguel F. Amezaga '24 spoke about the M.I.T. Development Program. Amezaga was asked by those present to find out in due time how this Club might try to co-operate. It was at this meeting that with sorrow we learned of the death of Manuel A. Cadenas '10, the first president of our Club.

A little before 9:00 P.M. on the evening of May 25, 1949, 35 members of Cuba's

M.I.T. group were sitting behind recently imported M.I.T. steins quite ready to make good use of them and to sing Technology songs with the aid of the record of M.I.T. songs. At this stein-on-the-table get-together a new crop of club officers were elected as follows: Miguel F. Amezaga '24, President; Antonio Rosado, Jr. '24, Vice-president; Angel Figueredo '47, Secretary, Francisco B. Vazquez '44, Treasurer; and Solomon Heisler '48, Luis Avelino Suarez '48, Gustavo Calleja '43, Committeemen.

Present either at one or both of these meetings were the following members of this Club: Joaquin R. Masferrer '14, Antonio Helier Rodriguez '21, President of our Club for the past two years; Miguel F. Amezaga '24, this year's president of our Club; Antonio Rosado '24, a professor at Havana University, not to be confused with Antonio Rosado, Jr. '24, who is with the Cuban Telephone Company and who is our present club vice-president; Justo L. Michelena '25; Jose Ferrer, Jr. '29; Juan E. Chibas '31; Gaspar B. Vizoso Colmenares '31; Hari Cruz-Bustillo '32; Modesto Ulloa '32; Julio Ulloa '33; Jose A. Villamil '38; Rafael Sanchez '38; Manuel Lopez-Callejas '38; Angel F. Clarens '39; Roberto Arellano '40, our Club's first treasurer; Jorge Echarte '40; Oscar Alonso '41; Alfredo Blanco '41; Alfredo Pedraza '41, who has been vice-president of our Club; Alberto Villamil '42; Luis Echarte '42; Guillermo York '42; Antonio Badia '43, your correspondent and last year's secretary; Victor Carmona '43, club committeeman last year; Gustavo Calleja '43, enthusiastic committeeman still well known at the Fox and Hounds; Gonzalo C. Docal '44, one time secretary and treasurer of this Club; Rafael de Carrera '44; Lorenzo Lamadrid '44; Francisco Vazquez '44, present treasurer of Club; Jose M. Aguila, Jr. '45, also once secretary and treasurer of this Club; Manuel A. Cadenas '45, once committeeman; Angel Figueredo '47, present secretary of Club; Agustin Reyes '48; F. G. Hidalgo '45; Enrique Rodriguez '50; Alfredo M. Dumois '48; Juan C. Grau '48; Salomon Heisler '48, on the organizing committee for this year; Ignacio Mora '47; Rene Lamadrid '48; Luis A. Suarez '48, also on the committee for this year. — ANTONIO F. BADIA '43, Secretary, Badia and Company, Aguila 558, Havana, Cuba.

### *Detroit M.I.T. Association*

The last meeting of the Association for the 1948-1949 season was held on May 24 at the United States Naval Air Station, Grosse Ile, Mich. Our host for the occasion was Captain J. P. Walker, U.S.N., and those arriving around 5:00 P.M. were given a tour of the Station prior to the dinner which was served at 7:00 P.M. Thirty-one members and guests attended this meeting and, following the inspection tour and dinner, a very fine welcome and short

speech were given by Captain Walker.

This Station is maintained for training pilots and developing combat efficiency in them. There are only three regular officers assigned by the Navy to this base consisting of a doctor, a colonel of Marines, and Captain Walker. All others on the post are in the Navy on a purely voluntary basis, which means that any one of them may resign and leave at any time they may choose. The post has facilities for 450 pilots and 1,000 enlisted men and has some of the finest recreational facilities which may be found anywhere in this vicinity. The Captain stressed that use of these facilities by young men 17 or over should contribute greatly toward preventing juvenile delinquency. Boys wishing to take advantage of this opportunity can attend for eight weeks in the summer. They will receive food, clothing, housing and \$75 a month pay. Those wishing to become a part of the organized reserve may spend one week end per month for which they will be paid \$10 and two weeks in the summer for which they will be paid at the rate of \$75 per month.

The Captain made a few remarks with respect to the Navy's part in national defense and stressed the fact, however, that it took a team to win and not just one branch of the Service which, of course, means that co-operation between Army, Air Force and Navy is the key to sound national defense. The Captain felt that the key Navy weapon is the fast carrier task force which uses cruisers, destroyers and carriers only and does not require battle-ships. Such task forces can cover a million square miles of ocean within 24 hours, and if we are to prevent attacks on the United States mainland, we must be able to provide sufficient shipping to support field forces outside of the United States. This means a considerable quantity of shipping since it takes one ton of shipping per fighting man to put the latter ashore at some distant point. A short question period followed the remarks by Captain Walker, the chief subject being radar equipment and its uses.

Since this was the final meeting of this season, club officers were elected for the 1949-1950 season as follows: President: L. Willis Bugbee, Jr. '21, Suite 400, 409 Griswold Street, Detroit 26; Vice-president: R. Gordon Spear '26, Fisher Body Division, 10-253 General Motors Building, Detroit 2; Secretary: Thomas F. Morrow '35, Chrysler Corporation, 341 Massachusetts Avenue, Detroit; Treasurer: Tredick K. Hine '16, 13220 Woodward Avenue, Detroit 3.

Just prior to adjourning, an expression of appreciation was given for Past President John Cronin's efforts during the past year, as well as a vote of thanks to Captain Walker for the hospitality extended to the Club by the Grosse Ile Naval Base.

The following were in attendance at the meeting: Minot S. Dennett '11, Joseph N.



French'11, Frank N. Phelps'13, Eugene J. Barney'16, John T. Cronin'17, L. Willis Bugbee'21, Charles H. Burnham'22, Everett V. Martin'24, Franklin Fricker'25, John E. Longyear'26, David M. Sutter'26, R. Gordon Spear'26, Herbert F. Green'29, Paul H. Richardson'30, Edward S. Coe'33, John D. Rumsey'33, Chesley Ayers'34, Frederick L. Haas'34, Wolfgang F. Rahles'34, W. Harold Bagley'35, Thomas F. Morrow'35, Henry S. Young, Jr.'35, James J. Holley'41, James R. Atherton'47, John Karmazin, Jr.'47, Worth H. Percivil'47. Guests: J. P. Walker, Captain, U.S.N., John R. Healy, Minot S. Eaton, Arthur W. Gay, and Miss Pat Schon. — R. GORDON SPEAR'26, *Secretary*, Fisher Body Division, 10-253 General Motors Building, Detroit 2, Mich.

### **The M.I.T. Club of New York**

This is perhaps my swan song in writing these notes and I can assure you that as secretary of the Club it has been one of my most pleasant duties among many others. We held our annual meeting for the election of officers on May 19 and the nominating committee has designated the following for the year 1949-1950: President, Saxton W. Fletcher'18, President, J. O. Ross Engineering Corporation; Vice-president, Edwin S. Burdell'20, Director, The Cooper Union; Vice-president, Joseph W. Barker'16, President, Research Corporation; Vice-president, Irving D. Jakobson'21, President, Jakobson Shipyard, Inc.; Treasurer, Armand L. Bruneau, Jr.'38, Partner, Bruneau and Von Minden; Assistant Treasurer, Thomas F. Creamer'40, National City Bank of New York; Secretary, G. Peter Grant, Jr.'35, President, Grant Photo Products, Inc.; Director to 1951 to fill vacancy, John H. Zimmerman'23, Development Engineer, Linde Air Products Company; Directors serving to 1952, David M. Broudy'22, Lawyer; Harvey I. Kram'42, Chief Production Engineer, E. A. Labs, Inc.; Duncan R. Linsley'22, Executive Vice-president, First Boston Corporation.

Pete Grant'35 brings to you young blood and I am sure it will be refreshing. After four years of service as secretary of the Club, it is a pleasure to pass the job on to one so capable as Pete. Sax Fletcher'18 has been one of our loyal Alumni and has contributed much towards the success of the Club. I am sure that under his guidance, along with his associate officers and directors, the Club will prosper and expand as time goes on. The retiring officers and directors will stand by with a faithful eye towards helping this progress in any way possible.

The by-laws have been changed and six new committees will be appointed as follows: Membership, program, publicity, placement, building fund, and finance. Complete information will be furnished when these offices have been filled.

Since our last report we regret to learn of the passing of Philip M. Wentworth'10 and Darrall S. Parsons'30, who passed away February 18, 1949, and May 28, 1946, respectively.

Let's all turn out for Alumni Day, June 11. Your correspondent will be on hand as he will be attending our 25th reunion.

Good luck to each of you. — WILLIAM W. QUARLES'24, *Secretary*, 330 West 42d Street, New York 18, N.Y.

### **M.I.T. Club of Northern Texas**

Horace S. Ford spent the evening with the Club on Wednesday, April 27. There were approximately 18 Alumni present. Without any doubt, Mr. Ford's description of the growth of the Institute and its present status was one of the most stimulating talks that we have been privileged to hear in a long time. The informal discussion lasted until 11 o'clock in the evening.

Cecil H. Green'23, Geophysical Service, Inc., Dallas, Texas, has been elected president of the alumni group and will take office at the next meeting. T. E. Huffman'23 remains as vice-president. — D. H. CLEWELL'33, *Secretary*, Magnolia Petroleum Company, Box 900, Dallas 1, Texas.

### **M.I.T. Club of Philadelphia**

The Club's spring dinner meeting was held in the duBarry Room of the Hotel duPont in Wilmington on May 17. Our previous meeting in Wilmington occurred exactly two years ago when the Club celebrated its Golden Anniversary. The dinner, as usual at the Hotel duPont, was excellent, and the punch was the best ever served at a club function and drew many favorable comments.

Robert E. Worden'36, President of the Club, was chairman of the meeting. Mr. Worden called on John Lawrence'32 of the SKF Industries, Inc., and a member of the club's executive committee, to introduce his classmate, Carroll L. Wilson'32, as our first guest speaker. Mr. Wilson delivered a very forthright and effective talk concerning some of the aspects of this atomic business as seen from his point of view as general manager of the United States Atomic Energy Commission. Our second guest speaker was H. E. Lobdell'17, Executive Vice-president of the Alumni Association. Lobby, as jovial as ever, entertained us with anecdotes from his many travels and concluded with a showing of the Kodachrome movie, "M.I.T. in 1948."

A total of 111 Alumni and guests attended the dinner. Those present were: Arnold S. Ackiss'30; Herbert W. Anderson'15; A. Rufus Applegarth, Jr.'35; Richard M. Armstrong'33; Lawrence H. Bailey'15; Walter J. Beadle'17 and Raymond Cooper, guest; Martin J. Bergen'26; Charles E. Berry'28; William H. Bertolet, 3d'48; George A. W. Bisbee'32; George W. Bricker, Jr.'23; Robert A. Brown'48; O. Donn Burton'18; Arthur A. Carota'36; Charles A. Cary'12; James B. Castner'27; R. E. Cernea'25; Frank S. Chaplin'32; J. Ernest D. Clarkson'21; Wallace W. Cogdill'34; J. Thomas Cooper'47; Wiley F. Corl, Jr.'39; Paul J. Culhane'23; Curtis D. Cummings'32; Robert A. Cunningham'26; William C. Dickerman, Jr.'30; Henry S. Dimmick'22; Walter R. Duncan'33 and Addison S. Ellis'32, guest; Francis V. duPont'17; James Q. duPont'26; Lamot duPont'01; William W. Eaton'97; Robert C. Eddy'38; Charles J. Fisher'46; Robert G. Fisher'44; Franklin T. Flaherty'21; Ezra

Garforth, Jr.'48; Richard L. Graff'39; Daniel C. Hall'19; Robert M. Harbeck'28; Henry D. Harrington'28; Warren J. Harwick'44; Stephen B. Hazzard'43; Edward J. Healy'23; Robert L. Hershey'23; Stephen P. Higgins, Jr.'43; Daniel J. Horan'48; Loring F. Hosley, Jr.'43; Howard Humphrey'26; George N. Jones'28; Knut J. Johnsen'41; Henry W. Jones'26; Harry P. Kelley'23; Kenneth T. King'15; Frederick E. Klutey'23 and Charles Warner, 3d, guest; Albert Kruse'22; John Lawrence'32 and Charles Scott, guest; Carl G. Lenk'39; Carl A. Lindgren, Jr.'18; Mason B. Lindsey'40; Harold E. Lobdell'17; Kenneth S. Lord'26; Harold C. Mabbott'12; Theodore A. McArn'21; William H. MacCallum'24; Samuel K. McCauley'41; Mrs. Samuel K. McCauley, guest; Frank S. MacGregor'07; Robert H. Meier, Jr.'47 and S. L. Shanaman, guest; Martin T. Meyer'32; John R. Mitchell'48; Richard S. Mooney'47; Clayton E. Mullins'38; William H. Peirce'46; Charles L. Petze, Jr.'25; William W. Pleasants'33; Oden B. Pyle, Jr.'16; Emil D. Ries'23; Robert E. Ritterhoff'46; Donald H. Rushworth'29 and George E. Hall, guest; Ralph M. Shaw, Jr.'21; Marvin S. Smith'26; Lombard Squires'31; C. Willis Stose'22; Charles H. Topping'28 and Edward A. Taylor'24, guest; Willard E. Vaughan'26 and Dana Devereux'36, guest; Hiram L. Walker'05; William H. Wannamaker, Jr.'30; Franklin E. Washburn'26; Robert W. Weeks'13; Charles B. Weiler'25; Robert S. Werden, guest; Proctor Wetherill'34; Ray N. Wheelock'25; Edmund A. Whiting'15; Nelson Whitman'42; George E. Whitwell'14; Carroll L. Wilson'32; Louis A. Wilson'14 and E. J. Flynn, guest; Charles P. Witsil, Jr.'37; Charles B. Wooster'29; Robert E. Worden'36.

Francis J. Chesterman'05 recently moved from our area to Hampton Falls, N.H. Mr. Chesterman, long an active member of the Philadelphia Club and a past president of the Alumni Association, is a life member of the M.I.T. Corporation. William H. MacCallum'24 of the Modern Talking Picture Service, Inc., is leaving these parts to take up residence in sunny California. Mr. MacCallum also has been active in alumni affairs for many years and is a past president of the Club. Renshaw Borie'05 of Hankins-Borie and Associates is the third member of the Club to move out of the area. Mr. Borie will reside in Niagara Falls, N.Y. The members of the Club extend their very best wishes to Frank, Bill, and Renshaw and hope that they will return frequently.

Our president, Robert E. Worden'36, partner of Worden and Risberg, management consultants, very ably debated on management's side in a labor-management discussion which recently was broadcasted and televised. The occasion was the forum sponsored by the University of Pennsylvania, and the subject was, "Should a fourth round wage increase be given?"

At this writing, a club picnic is being arranged for Saturday, June 4, 1949. A report on this affair will appear in this column next fall. — For information about Alumni in the Philadelphia-Wilmington area, telephone Boulevard 0287. — SAMUEL K. MCCAULEY'41, *Secretary*, 288

Copley Road, Upper Darby, Pa. *Assistant Secretaries:* WILEY F. CORLE, JR., '39, Box 358, Bryn Mawr, Pa.; WILLIAM H. PEIRCE '46, 532 East Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.

### **The M.I.T. Club of Rochester**

"Facts, rumor, and gossip around the Institute" were reported by Professor Leicester F. Hamilton '14 to the Club on May 4. Thomas P. Pitre, Dean of Freshmen, commented on his interviews with scholarship candidates from the Rochester district that afternoon, and explained to the Club the newly established Rochester alumni regional scholarship.

Growth of M.I.T. to the point where there is now a total of 8,000 students and staff on the lot, and development of a zoning plan for location of new facilities on the campus have emphasized the fact that M.I.T.'s land area is limited, Professor Hamilton said. To bring club members up to date, he conducted an imaginary tour from Cottage Farm (alias Boston University) Bridge to the National Research Building, stopping on the way to review present activities and speculate on future plans. Hamilton, for a number of years, has represented the Club on the Alumni Council, and this visit has been eagerly anticipated by his constituency. Plans are underway to make this possibly an annual event.

Establishment of the Rochester alumni regional scholarship supplements the Rochester Club scholarships, given each year since 1928 (except during some of the war years) from funds contributed by Rochester Alumni. Commenting on the outstanding character of this year's Rochester scholarship candidates, Dean Pitre and Honorary Secretary Dwight Vandevate '22 agreed that the delegation should be a welcome addition to the M.I.T. community.

The following members were present: Harold E. Akerly '10, Collin H. Alexander '39, Joseph H. Altman '42, John F. Ancona '03, Ernest L. Baxter '26, George B. Boettner '41, James S. Bruce '39, Alfred E. Castle '40, Henry R. Couch '20, C. King Crofton '22, Evan A. Edwards '37, Edward S. Farrow '20, John R. Green '46, William N. Hosley '48, Stanley E. Jensen '48, Donald B. Kimball '20, Frederick J. Kolb, Jr., '38, Harold H. Leary '23, Lee McCanne '27, Leon L. McGrady '17, Austin D. McGuire '49, Edwin M. Meyer '26, Thomas A. Mitchell, Jr., '43, Victor J. Moyes '24, William O. O'Neill '43, Earle E. Richardson '19, James S. Ruoff '44, Rolf E. Schneider '37, Paul W. Stevens '37, Robert H. Thompson '39, Frederick F. Tone '35, Dwight Vandevate '22, Paul B. Wesson '98, Vernon E. Whitman '22, Duncan M. Wilson '42, Richmond W. Wilson '40. — *FREDERICK J. KOLB, JR., '38, Secretary*, Kodak Park Works, Building 14, Rochester 4, N.Y.

### **M.I.T. Club of St. Louis**

A spring meeting was held at the University Club on the evening of May 18. Sixty members heard about the Convocation firsthand from two of the principals, Arthur H. Compton, Chancellor of Wash-

ington University and a delegate to the Convocation, and Charles A. Thomas '24, Executive Vice-president of Monsanto Chemical Company and a speaker on the panel "Specialization in Twentieth Century Education." In addition, audience impressions of the Convocation were given by other St. Louis Alumni who attended, including Ed Fulton '30, Club President, Charles Loomis '16, Dave Wells '30, Leon Katzenstein '13, Bob Joyce '28, and Sam Shure '28. — *JAMES R. CASSERLY '43, Secretary*, 6136 McPherson Avenue, St. Louis, Mo.

### **M.I.T. Club of Schenectady**

The Club held its May meeting at the Young Women's Christian Association at noon on May 18. Dave Jealous '44 had made all the arrangements and introduced the speaker, Dr. H. M. Rozendaal of the General Electric Atomic Power Laboratory, whose subject was the problem of cancer. Dr. Rozendaal first explained the workings of cells and the effect of cancer on them, outlined the present thinking on the causes of the disease, and finally listed possible treatments. The meeting was then opened for questions. Dr. Rozendaal felt that the greatest need of the cancer drive is energetic young doctors and scientists who are interested in fundamental research into the causes of cancer, and he agreed that contributions of money to the cause make the entry of such people into this field more likely.

The nominating committee, made up of Rozzie Austin '42 as chairman, Fred Barrett '34, and Bob Brown '43, has announced that Joe Quill '41, and Ivor Collins '41 have been re-elected president and secretary-treasurer, respectively, for 1949-1950.

We were very glad to welcome to the meeting two of our senior members, Fred Mackintosh '86 and Robert Palmer '04. Also present were: A. Vogel '13, P. M. Currier '14, P. L. Alger '15, V. Y. Dunbar '16, H. L. Wirt '18, H. W. Bibber '20, B. S. Weaver '25, G. C. Houston '27, C. F. Barrett, Jr., '34, S. Roberts '38, D. C. Jackson, '3d, '40, I. W. Collins '41, P. G. Cushman '41, G. M. Ketchum '41, J. S. Quill '41, R. W. Stanhouse '41, R. W. Austin '42, D. Jealous '44, E. J. Gehrig '46, A. M. Varner '47, N. M. Bengtson '48, and F. Brown, Jr., '48. — *IVOR W. COLLINS '41, Secretary*, General Electric Company, Building 273 E-212, Schenectady 5, N.Y.

### **M.I.T. Club of South Florida**

The Club convened on May 3 at the Opa Locka Naval Station Officers' Mess. Officers for the coming year were elected, reports were submitted by committee chairmen, and a talk on public housing was given by Tom Coogan '24, the First Vice-president of the National Home Builders Association. The new officers, all selected by unanimous acclaim, are as follows: Cecil G. Young '23, President; Clarence P. Thayer '23, Executive Vice-president; Stanley Fosgate '24, Secretary-Treasurer.

The retiring Treasurer, Clarence Thayer '23, reported that our financial position is temporarily secure, since all members have complied beautifully with the re-

quest for dues. He announced, also, that two men from other areas have been placed by our Club in positions in south Florida. At such time as additional industry is attracted here, our Club will be able to help place Alumni wishing to settle here.

Fred Zurwelle '20, told of his visit to the Mid-Century Convocation at Cambridge. He was vastly impressed by the entire proceedings, which included, as we know, talks by Winston Churchill and Harold E. Stassen. President Killian, says Fred, is able to hold his own as a speaker in even this sort of competition, and is certainly one of whom we may all be proud.

Tom Coogan occupied the speaker's stand for the major portion of the evening. He began by stating that every builder, to be successful, must love his work, as it takes up nearly 24 hours of his day. Since the war, tremendous strides have been made by private builders in meeting the vast demand for new homes, so that today the housing shortage has been practically overcome in most areas. The Federal Housing Authority must take much of the credit for this achievement; its operations have been efficient and valuable. Mr. Coogan then went on to discuss the present housing bill now before Congress. Many of its features should be examined searchingly by all citizens, as it illustrates the growing trend of our Federal Government to make large grants without adequately planning on the source of its revenues, or the possible impact on the people. Slum clearance, taken by itself, is necessary and desirable, but our government is going beyond this objective in Mr. Coogan's view. It is authorizing a bill which may involve the expenditure of twenty-one billions of dollars in the next ten years, at a time when deficit financing seems almost inevitable. Although most private builders are putting up housing at a cost of about \$1,500 dollars per room, including the price of land, it was reported that the government is planning to finance its housing at an allowance of \$2,500 dollars per room, exclusive of the cost of land. Such homes, when completed, will be largely tax-exempt. Many people who live in these homes will lose their incentive to become home owners, at a consequent loss to the community at large. The present freeholders of the community will find that their own tax burdens are becoming more crushing. It is regrettable, Mr. Coogan continued, that anyone who sincerely speaks up against the government trend towards socialism is frequently branded a tool of some vested interest. Actually, the middle class which has worked and saved for many years is being squeezed hard, and should make itself heard now. At the conclusion of the talk questions and answers were exchanged. The membership agreed that the talk was most stimulating, and served a valuable educational need.

Members present, in order of class year, were: Charles Swift '99, Alfons G. Taylor, Fred Zurwelle '20, Ed Mandell '21, Clarence P. Thayer '23, Cecil G. Young '23, Tom Coogan '24, Stanley Fosgate '24, Lloyd J. Porter '24, Richard O'Donovan '27, Meyer Baskin '34, George McCaughan



'34, Robert Nedbor'37, Paul Comstock'39, Irving Peskoe'39, William Sussman'40, Ralph Cromer'45, and George Rockerman'47. — CLARENCE P. THAYER'23, *Secretary*, 50 Northwest 44th Street, Miami 37, Fla.

### **M.I.T. Club of Southern Texas**

Horace S. Ford, Treasurer of the Institute, arrived in Houston on the evening of April 21. The following day, he attended a luncheon in his honor held at the Houston Club through the courtesy of Richard T. Lyons'17, Irwin W. Alcorn'23 presiding. It certainly was pleasant to see Mr. Ford again and to hear more about M.I.T. and, also, the development program which is now in progress.

We were unable to persuade Mr. Ford to remain here long enough to see something of this area. He was traveling on a very close schedule; which included visiting San Antonio, Dallas and Tulsa before his return to Cambridge. — JOSEPH H. McEvoy'21, *Secretary*, 202 McGowen Avenue, Houston 6, Texas.

### **The M.I.T. Club of Tulsa**

The regular monthly luncheon meeting at Smith's Restaurant on April 6 was enjoyed by 10 members. Final plans were concluded for the special luncheon on April 29 to meet with Horace Ford during his motor trip through this part of the country. Eighteen members and two guests, Mr. Ford and Mr. Nichols from Dallas, met at the Mayo Hotel and thoroughly enjoyed Horace Ford's highlights and sidelights on the recent Convocation and visit of Winston Churchill to the Institute. Mr. Ford also gave the Club a great deal of interesting information on present and future Institute operations. His visit was greatly appreciated, as evidenced by the fact that it was difficult to adjourn the group as late as 2:00 P.M.

Otto E. Kirchner'24, Director of Engineering for American Airlines, delivered a paper on "Some Aspects of Air Transportation Operations" at the March 15 meeting of the Mid-Continent section of the S.A.E. — The Club welcomes Don Walsh'45, who has moved here as a technical sales engineer with U.S. Rubber Company.

The outstanding success of the Tulsa regional meeting of the American Institute of Chemical Engineers May 8-11 was partly due to the efforts of many club members. Howard Grekel'47 served as general chairman, Scott Walker'40 was an advisory member of the arrangements committee and Frank Pearce'46 acted as secretary-treasurer. Other club members serving on committees were: Warren Twaddle'42, Carl Minden'47, T. Q. Eliot'42, Cliff Frye'47, Jess Dew'48, and W. S. Smith'30. The Mesdames Eliot, Frye and Grekel assisted on the ladies committee. — WALTER S. SMITH'30, *Secretary*, 709 McBirney Building, Tulsa 3, Okla.

### **Washington Society of the M.I.T.**

The Society held its May meeting in Barker Hall, 17th and K streets, Northwest, on May 4. After dinner the mem-

bers elected by unanimous ballot the slate submitted by the nominating committee. The administration for the 1949-1950 season is as follows: President: Albert E. Beitzell'28, 6701 Delfield Street, Chevy Chase 15, Md.; 1st Vice-president: Robert K. Thulman'22, 2913 Stanton Avenue, Silver Spring, Md.; 2d Vice-president: Wallace E. Wentworth'16, 1445 Ogden Street, N.W., Washington 10, D.C.; Secretary: John Ade Plugge'29, 35 Oxford Street, Chevy Chase, Md.; Assistant Secretary: Nicholas P. Stathis'29, 2226 Observatory Place, N.W., Washington 7, D.C.; Assistant Secretary for Women: Mary O. Soroka'26, 1916 R Street, N.W., Washington 9, D.C.; Review Secretary: Albert F. Bird'30, 5070 Temple Hills Road, S.E., Washington 20, D.C.; Assistant Review Secretary: John W. Sheetz, 3d'42, 3068 South Woodward Street, Fairlington, Arlington, Va.; Treasurer: Aubrey D. Beidelman'15, 1331 Monroe Street, N.E., Washington 17, D.C.; Assistant Treasurer: Frank S. Pohanka, Jr., '44, 1126 20th Street, N.W., Washington 6, D.C. Additional members of the executive committee are: Proctor L. Dougherty'97, 3723 Jenifer Street, N.W., Washington 15, D.C.; George D. Mock'28, 4214 Oakridge Lane, Chevy Chase 15, Md.; Rear Admiral Julius A. Furer, U.S.N., retired, '05, 2101 Connecticut Avenue, N.W., Washington 8, D.C.; Percy H. Thomas'93, 3051 Idaho Avenue, N.W., Washington 16, D.C.; Raymond A. Frigon'41, 1785 Massachusetts Avenue, N.W., Washington 6, D.C.; George W. Stone'89, 410 Cummings Lane, Chevy Chase 15, Md.

Our speaker, I. A. Getting'33, Professor of Electrical Engineering at M.I.T., stirred our imaginations and generated added respect for the material now being taught at the Institute when he discussed the Electromagnetic Radiation Spectrum. Dr. Getting pointed out that in approximately one century man's brain has deduced and developed the entire theory and practice of knowing and using the waves of all parts of the spectrum save one, the cosmic radiation. This shortest of the waves, we were told, coming from great unknown distances outside the world's system, showers the earth with radiation of enormous energy which, as yet, man is unable to use. This, said the speaker, is the present frontier of knowledge. Dr. Getting presented an absorbing talk on radiations of all wave lengths from the hundred yards or so of radio, down through short wave communications, frequency modulation, television, infrared, color, ultraviolet, x-rays, radioactive waves, and cosmic rays. We were impressed with the mystery of the subject, but particularly with the tremendous intellectual energy of the series of minds which have progressively pushed back the frontiers of knowledge in radiation through the past hundred years.

Present were: J. M. Ashton'24, H. M. Baxter'17, A. D. Beidelman'15, A. E. Beitzell'28, A. F. Bird'30, C. Bittinger'01, E. B. Bradford'34, M. Brimberg'29, M. E. Brown'43, Z. Carof'43, W. V. Cash'24, V. K. Cates'24, S. J. Cole'26, L. W. Conant'21, J. G. Crane'90, P. L. Dougherty'97, L. K. Downing'23, J. A. Furer'05, L. Glickman

'32, H. H. Groves'04, R. M. Hartley'45, A. S. Heyser'26, A. M. Holcombe'04, J. Y. Houghton'26, J. E. Howarth, Jr., '29, F. A. Hunnewell'97, L. F. Kreek'25, E. F. Kriegsmann'05, R. McKay'21, W. K. MacMahon'22, G. E. Marsh'20, W. H. Martin'11, J. A. Mathews'30, F. W. Milliken'04, G. D. Mock'28, D. K. Morgan'32, V. A. Myers'47, N. C. Nelson'30, E. L. Osborne'14, W. G. Peck'40, J. A. Plugge'29, F. S. Pohanka, Jr., '44, H. W. Poole'30, R. J. Robuck'43, J. H. Ruckman'10, J. W. Sheetz'42, R. J. Slutz'38, G. H. Snyder'34, M. O. Soroka'26, F. Stapleton'24, N. P. Stathis'29, G. W. Stone'89, G. W. Stose'93, P. R. Taylor'20, R. K. Thulman'22, F. W. Turnbull'30, W. E. Wentworth'16, R. W. West'32, F. W. Willcutt'27. — JOHN ADE PLUGGE'29, *Secretary*, 35 Oxford Street, Chevy Chase 15, Md. ALBERT F. BIRD'30, *Review Secretary*, 5070 Temple Hills Road, S.E., Washington 20, D.C.

## **CLASS NOTES**

### **• 1888 •**

Notice has been received of the death of Eugene S. Daniell on May 23 in Franklin, N.H. Mr. Daniell was a son of former United States Representative, Warren F., and Abbie A. Daniell. He was educated in local schools and at Dr. Child's school in Newport, R.I., and studied under Moses Woolson of Concord. He left Technology in his sophomore year to accept an executive position with the Fall Mountain Paper Company in Bellows Falls, Vt. He succeeded his father as superintendent of the Winnetoesaukee Paper Company, was at one time owner and operator of a dairy farm in Greenland and later was associated with paper mills in Augusta, Maine, and Piercefield, N.Y. He served as trustee of the New Hampshire State College for several years and during the last two years of the Hoover administration was engaged in the potato control and production program in Aroostook County, Maine. He served one term in the New Hampshire legislature, representing the Portsmouth district. He was a veteran of World War I, serving as a major in the Army Ordnance Department in Washington, D.C. Surviving are his wife, Mrs. Mary Daniell; a daughter, Mrs. Vivian J. Gianelloni of Havana, Cuba; three sons, Warren F., of Millinocket, Maine, Martin H., of New Haven, Conn., and Mayor Daniell of Franklin, N.H.; a brother, Jere R. Daniell'97 of Franklin; and 12 grandchildren. — EDWIN S. WEBSTER, *President*, 49 Federal Street, Boston 7, Mass.

### **• 1892 •**

Those of us who were able to attend the various events on the program at the inauguration of President Killian were amply repaid, as those who have read the articles in the May issue of *The Review* may be well aware. The roster of '92 men who attended, part, at least, of the events, was as previously stated: Ingraham, Carl-

son, Ober, and the Secretary. After the meeting in the Boston Garden at which Dr. Stassen spoke, the Secretary had an opportunity for quite a chat with our Class President, George Ingraham. Found him well and enjoying his retirement at his home in Marblehead, Mass.

Our former secretary, John W. Hall, reports that he is home again after several weeks in the hospital where he underwent a serious operation from which the time of recovery was slow; and although considerably improved and able to get around the house and out of doors, he is not quite back to normal. He states that he has given up most of his activities and regrets mostly giving up his chorus affiliations: "I would rather, any day, make music than hear it. My radio is running pretty constantly. Please remember me to any '92 men."

Last month the Secretary also received a letter from Carleton E. Davis who is still active as vice-president of the Philadelphia Suburban Water Company with headquarters at Bryn Mawr, Pa. He states that he is "trying to do less and less even though I am not succeeding very well." He is actively interested, however, in any of our class doings, and although he states that a trip to Boston seems to be quite a burden, we hope that some day he may be able to join us in a reunion here.

Doc Worthington, who is still engaged in active practice as a physician in Dedham, Mass., sent the Secretary word a short time ago that he was looking forward to our 60th reunion. And that is three years hence. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

### • 1893 •

Following several weeks' illness, William Thomas Barnes, who graduated with our Class from the Course in Civil Engineering, passed away at his home in Kingston, Pa., on May 13. He was born in Salem, Mass., on May 29, 1871, and married Maude Frances Getchell on October 17, 1906.

Since leaving the Institute, except for two and one-half years in railroad work, he had been engaged chiefly in the design, construction and operation of water and sewerage plants. Having been affiliated with the firm of Metcalf and Eddy over a period of 20 years, he withdrew his partnership in the firm in 1920 to become chief engineer of the Scranton-Spring Brook Water Service Company, a position which he held until the time of his death. Barnes acquired an enviable reputation as an engineer, and was noted in the community where he lived for 30 years as a man of exceptional ability combined with the happy faculty of being able to get along well with other people. The Watres Dam, which he designed and built, was at that time the highest earth dam in Pennsylvania.

In addition to his reputation and accomplishments as an engineer he was one of the most prominent Masons in Northeastern Pennsylvania. He had served as master of Lodge 61, Free and Accepted Masons in Wilkes-Barre, and also as district deputy grand master of the 11th Masonic District from 1936 until he retired in 1947. A testimonial dinner in April,

1948, was attended by 600 Masons, including many distinguished visitors who paid tribute to his high standing as a citizen.

Barnes was a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, the New England Water Works Association, the Massachusetts Society of Mayflower Descendants and the Wyoming Valley Chamber of Commerce. He was also a member of the Christian Science Church. He is survived by his wife and a son, Wellington Thomas Barnes, and a grandson, William T. Barnes, 2d.

Regarding the Alumni Fund, although our Class has made a good start on the 1949-1950 campaign less than 25 per cent of the living members have as yet made any contribution. Your Secretary, acting as Class Agent, believes that the old saying, "if the coat fits you put it on," is still good. We need your help to go over the top. — The report of our annual luncheon meeting on June 9 will appear in the November issue of *The Review* — FREDERIC H. KEYES, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 38 Chauncy Street, Boston 11, Mass.

### • 1894 •

Several members of the Class who cannot be with us for the reunion have written letters from which excerpts may be made which will be interesting to others than the Secretary. John Ferguson writes from 646, 34th Avenue, South, St. Petersburg, Fla., regretting that he cannot be with us. He says: "I haven't been present at a reunion in a long time. On account of failing sight I gave up active work in 1939, three years before compulsory retirement, and since then my wife and I have spent summers in New Hampshire and winters in Florida. Last fall I had an attack of virus pneumonia from which I have never fully recovered, so my activities at present are rather limited. I now find much time for reminiscing, and my thoughts turn back with great pleasure to the years I spent at M.I.T., realizing the benefit, and the spirit of good fellowship obtained during our undergraduate days. Best wishes for a successful reunion." We shall all remember with pleasure John's companionship at early reunions, and his enthusiasm and skill in our golf tournaments. He was one of the best.

Austin Sperry says: "Will wire you later if I am able to come. Have been laid up at home two times in the last six weeks; nothing serious, but enough to make me stop and say I am not as young as I was ten years ago when I had such a wonderful time at our 45th." The Secretary hopes to see Austin in July in California, and is sure that there will be a small reunion then. — John Kittedge writes from Hartford: "I still have strength for a stint each day at a draughting board. I am now so deaf I lose out on all programs and can carry on person to person conversations only with great difficulty. Am not now working, and have taken advantage of the interval to do a number of things I didn't have time for before. One of them was to write *My Day in Exeter* the story of my life in the

old academy. It put me in touch with many of the survivors and with those who are administering the old school today. It was very pleasant to get in touch with them." Kit has also written many songs, some of which he has sent for use at class reunions. This was much appreciated. But alas! We are not a singing Class, although a few, like Harry Bates, excelled in the art and gained reputation thereby.

A fine letter from Theodore Horton, now living in old Sandwich on Cape Cod says: "I hardly feel up to crowds, ceremonies and festivities these days, though enjoying fairly good health. Sorry our reunion was not to take place on Cape Cod which used to be such a happy hunting ground, and where it would have been a simple matter for me to attend. At the time of receiving your first notice I conjured up visions of not only intermittently joining the gang at East Bay Lodge, but had planned to put on a luncheon at my home which was to be followed by a modest sightseeing tour of Sandwich that would include a visit to the Museum of our Sandwich Historical Society, of which I am president, a 'once-over' of the ruins of the old Sandwich Glass Works, old burying ground, old Congregational Church with its famed Christopher Wren Steeple, and so on. If you think any of our classmates and their wives would be interested in a side trip to Cape Cod during or after the reunion, an invitation to luncheon and sight-seeing trips referred to would still be in order and be a pleasure for both Mrs. Horton and me to look forward to. You would, of course, let me know in advance so we could make arrangements. Since all of these glorious hopes are not to be realized, although I hope some may be, you and the rest of the survivors have my blessing and hope for a thoroughly congenial and happy time." A fine letter, and a fine spirit. Teddy may have a heart which limits him physically, but it certainly puts no limits on his splendid loyalty and his quiet service in the significant affairs of his home town.

Joe Kimball writes: "I hope there will be a substantial number who will attend the reunion and that each will feel well rewarded for going to it. I was retired from my work on flood control with the Tennessee Valley Authority after reaching the stipulated age limit. My wife and I are now with our daughter who is head of the research department of the New Britain school system. My wife is an invalid, having had a stroke of paralysis some years ago, and I cannot leave her for any length of time. I should like to be present." And the Secretary is sure all who attend would be glad to see Kimball again, and extend sympathy and hope that Mrs. Kimball may improve in health. Joe, in spite of his modesty and quiet nature, has had a career of distinguished service in all the years since graduation and especially with T.V.A.

Hardly a month goes by without the news of the passing of some of our Class. This month we report with great regret the deaths of Leon K. Davis, Dr. Oscar R. Couch, and Takateru Kuki. Davis died on November 10, 1948, of pneumonia following an illness of several months, but with his never-give-up spirit kept man-



fully at work. In October, he entered the hospital for observation and treatment, and on his return expected to be back in his office in a couple of days when he was taken seriously ill and pneumonia developed. L. K., as he was familiarly known to us, was a genial and loyal classmate with a fine sense of humor and a great capacity for friendship. We mourn his loss. Dr. Oscar R. Couch was with the Class only in the freshman year. For many years he had been a physician in the Army Service located in Harlingen, Texas. He died on August 21, 1948. Kuki, also, was with us but a single year; after which he returned to Japan and for many years nothing was heard from him directly. It was reported that he was a viscount and a member of one of the great families of old Japan. At the time of his death in September, 1948, he was a resident of Kobe. It is inevitable that with our advancing years there must be an increasing record of the losses in our old ranks.—SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

### • 1895 •

Many of our mates will be glad to learn that the records, models, photographs and memorabilia covering the operations and progress of yacht, ship and marine construction at the world famous Herreshoff Manufacturing Company in Bristol were turned over to the Institute by the R. F. Haffenreffer Family Foundation. Selection and presentation of this vast store of material was made in the company office in Bristol by R. F. Haffenreffer, President of the once flourishing shipbuilding concern which gained its fame as the builder of yachts which successfully defended America's Cup since 1893.

Present at the informal ceremonies were Carl W. Haffenreffer, Vice-president and General Manager, and A. Sidney DeWolf Herreshoff, son of the late Captain Nathaniel Greene Herreshoff, who was known as the "wizard of Bristol." The selections were made by Admiral E. L. Cochrane '20, Head of the Department of Naval Architecture and Marine Engineering at M.I.T.; Herbert E. Beckwith '26 Professor of Architecture at M.I.T.; George Winshman and Vernon D. Tate, Curator of Exhibits and Director of Libraries, respectively, at M.I.T. The Bristol collection will be housed in the Hart Nautical Museum. Operations at the sprawling boatbuilding yards in Bristol were halted shortly after the end of World War II. During the war, the yards turned out 100 fighting ships, including motor torpedo boats, aircraft rescue boats, minesweepers and coastal transports.

Joseph E. Walworth has returned from his Florida location to his home address, 8 Locke Street, Andover, Mass.—LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

### • 1896 •

Class news during the past month has been fragmentary. Mrs. Perry Howard, Mrs. John Rockwell, Bill Anderson, Ralph Henry and the Reverend Partridge are among our classmates or immediate family who have been under critical observation but who seem to have outridden the storm

of human frailty. As one follows the trend of the times, i.e., foundation studies of heart, lungs, and cancer, it prompts one to remember that man is more singly vulnerable to the pitfalls of life after seventy. Let's be realistic and face the sunset of life with good judgment as to physical and mental stresses and act our age. There is so much in life that is beautiful within the "50-year-class" range that we should not destroy the possibilities of a glorious sunset because of foolish and obstinate pride.

Your Secretaries plan to be at "Capens," Moosehead Lake, Maine, for early June salmon fishing. Mrs. Rockwell will be with me, and Fred Damon has several business friends as guests.—Myron L. Fuller is back in Easton, Mass.

We have just received notice of the death of George L. Blakeslee on December 15, 1947.—We also regret to report the death of Richard F. Morgan on April 4. The following information is taken from the Buffalo, N.Y., *News*: "Dr. Richard F. Morgan, 79, a professor in the Buffalo College of Pharmacy and the University of Buffalo 28 years, died . . . in his home, 139 West Oakwood Pl. . . . Dr. Morgan was born Sept. 2, 1869. . . . His parents were Anna Howe and William A. Morgan. He attended the public schools of this city and . . . Technology and received the degree of Doctor of Pharmacy from the University of Buffalo. On Sept. 16, 1896, he married the former Nellie Bancroft. . . . Dr. Morgan became assistant librarian of the Grosvenor Library in 1895. . . . He was employed for a brief period as a chemist for the Buffalo Foundry & Machine Company. In 1907, Dr. Morgan was appointed professor of mineralogy at the Buffalo College of Pharmacy. Between then and his retirement in 1935, he held professorships in botany and microscopy. Dr. Morgan was one of the organizers of the microscopical section of the Buffalo Society of Natural Sciences in 1921. Later, he organized the Buffalo Microscopical Society and served as its president for 25 years. After his retirement Dr. Morgan spent much time in lecturing before clubs and educational institutions. His services were frequently in demand by business concerns in this country and Canada which required a consulting mineralogist. Dr. Morgan was a past grand master of Crescent Lodge, I.O.O.F., a past master of Hiram Lodge 105, F. & A. M., and a fellow of the Royal Microscopical Society of London. He maintained active memberships in the Literary Clinic, Conchological Club and Beta Phi Sigma Fraternity. He is survived by his wife and a son, Irving B. Morgan of Washington."

Don't forget the Alumni Fund. Make some provision in your wills for a percentage benefit to our truly dear and great alma mater.—JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, 275 Broadway, Arlington, Mass.

### • 1897 •

At the Alumni Day celebration of the Lowell Textile Institute, Lowell, Mass., one of the two new dormitories was dedi-

cated to President Emeritus Charles H. Eames who died early in 1949.

Word has been received from William J. Deavitt '06, of San Francisco del Oro, Chih., Mexico, of the death on May 4 at Laguna Beach, Calif., of Henry M. Deavitt, V. Most of the latter's life after leaving Technology was spent as a consulting chemist in Chicago. Retiring about four years ago, he had since resided in Tucson, Ariz., and Laguna Beach, Calif. He leaves his wife, two brothers and a sister.—JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

### • 1898 •

This man, Dan Edgerly, must be a mind reader. Hardly had we sent the copy of '98 class notes for the June edition of *The Review*, suggesting an editorial board in each of the sections of the country, when a letter arrived from Dan with interesting items from the Chicago region. So, here goes for the first Chicago edition of '98 class notes, Daniel W. Edgerly, editor, 76 East Monroe Street, Chicago 3, Ill.: "An April, 1949, issue of the Chicago *Daily News* contains Architect Robert DeGolyer's sketch of a 12-story building for 346 apartments at a cost of \$3,700,000. Not since about 1920 has any large apartment building been erected in Chicago and this new one will rank among the other two or three big ones. In these days when living quarters are the subject of much publicity, it is gratifying that our classmate leads in the designing of such a prominent building.

"Clarence Goldsmith is one of the few members of our Class who was active in both the recent wars. He was a major in World War I and a colonel in World War II. A few brief highlights of his activities in the latter are as follows: In September, 1940, Goldsmith went to Washington as a member of a five-man group who were to organize and run the strategy of 'Defense Against Fire.' This had far-reaching ramifications. An early instance was the protection against fire hazards of the many temporary camps used in the training of the armed forces. 1943 finds him in Utah with the Strategic Bombing Survey and the Chemical Warfare Service. Here he had evidently changed from protective defense to war offense as his knowledge of fires was used in the development of munitions and methods to intensify our war efforts. This particular work was that by observing the dropping of 60,000 incendiary bombs the effects under all conditions could be graded. Studies of smoke bombs, trench mortars, bomb fuses and land mines were also made. In a report by the Chemical Warfare Service, it was stated that Goldsmith's evaluating the effect of incendiary bombs has been of major value and has directly contributed to the development of highly efficient munitions. A two-month interlude in the above work was a 5,000-mile trip to Canada and Alaska for other war work.

"Toward the end of the war he went to Europe to study and report on the effects of bombing for the Strategic Bombing Service. This included air trips to Germany, Rumania and other places. Data was worked out for the number and type

of bombs to be used on vital war plants and installations. In five years of war service, 110,000 miles were traveled by train, ship, air and automobile. In this total were 20,000 miles by air and 16,000 miles holding on to a jeep. An official report states that: 'Soldiers will hail that jeep record as a herculean feat.'

"Today, Clarence is back at his desk in Chicago working on better fire protective methods, with side issues of looking after his pet turtles and also 350 acres of land in North Reading, Mass., which has been in the family for about 120 years."

Before you read these notes you will have heard from President Lansingh about the '98 get-together on Alumni Day, 1949, with other news and further elaboration of the enlarged editorial board idea. All rally around Van and respond to this beneficent idea. — And so, members of the Class of '98, as The Review will not appear again until November, we wish you, one and all, and your relatives and friends, a very happy and pleasant summer, and let us see or hear from you all. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. JOSEPH C. RILEY, *Assistant Secretary*, 9 Pond View Avenue, Jamaica Plain, Mass.

## • 1899 •

Undoubtedly, some classmates will scan this column expecting to see a report on the outstanding features of the 50th reunion of the Class in June, but "no can do." The Editors of The Review have decreed that May 20 be the deadline for the submission of copy for the July issue. Therefore, what you find here was written before the 20th of May. Not being the seventh son of a seventh son I can't predict just what is going to happen at our 50th reunion, June 9, 10 and 11. However, a goodly number have indicated that they expect to be at the festivities, and many will have with them their spouse, a son or daughter or a grandchild. A full report of the reunion will appear in the first fall issue. Look for it and read it.

Your Secretary happened to be in the vicinity of Boston when he heard that Gardner Barry, I, was in the Melrose, Mass., hospital facing an operation and visited him there. Report has it that Gardner is making a rapid recovery. He was stricken while attending the funeral of his stepmother, aged 97½ years at the time of her death. — In the May Review I reported that Ralph Loud of Arlington, Mass., had had a serious operation. Later I was able to call on him at his home and found that he was making a remarkable convalescence, considering all he had been through. He had high hopes of attending the June reunion.

William White, V, now retired, has spent most of his professional life as chemist, demonstrator, sales manager, superintendent and manufacturer of smokeless powder, nitrostarch and dynamite in both the United States and Canada. As a young graduate he certainly selected a profession where he might quickly rise in the world. — The Boston *Herald* of May 11 carried a picture of William Stark Newell with the following notation: "William S. Newell, President of the Bath (Me.) Iron Works,

which built 32 Trawlers for France during the war, yesterday received the Chevalier's Cross of the French Legion of Honor at the Consulate in Boston." — Ralph H. Pinkham, I, who has been at Fort Lauderdale, Fla., is now located at 1207 Michigan Avenue, Evanston, Ill.

Harry H. Morton, whose death notice appeared in a previous issue was engineer for the Plymouth, Mass., Street Railway Company before becoming connected with the I. H. Morton Company of that city. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

## • 1901 •

Ralph Robinson writes: "Mrs. R. and I spend three months in Fort Lauderdale, Fla., each year. Fort Lauderdale is a very beautiful city. It has wonderful flowers and homes, and fine bathing, fishing and golf. The weather is ideal from January to April. April 15 we sail to Europe for three months to visit our oldest son, H. A. Robinson (M.I.T. '30), who is located in Stockholm, Sweden, as the scientific expert and counsellor for the United States State Department. Incidentally, three of our six grandchildren are in Sweden, going to school and learning the Swedish language. Our health is excellent and we are really enjoying ourselves. Incidentally, Pete, my golf games last week were 87, 84, and 86 so be prepared for a licking on our 50th anniversary. [We can take it if we have to. G.C.P.] On my road north, stopped at Hal Orr's Hotel at Rocky Mount, N.C., for the night. My housemates turned out to be Mr. and Mrs. Milton W. Hogle (Course II). He was just recovering from a bad case of arthritis, but after three months in Florida had recovered and was on the road back to Rochester, N.Y., to go to work again. Had a very enjoyable visit with them." For some time Milton has been factory manager, Hopeman Lumber and Manufacturing Company, in Rochester.

A note from Bob Derby reads in part: "In the past, with my usual modesty, I haven't done much contributing to the class notes. To partially amend for this, I am now sending you a status account which, if you see fit, may be published in part or in whole if space permits. I retired at an early age in 1938. In view of the shortage and need for machine-tool men I went to work again for the government in 1940 in Washington, Australia, and elsewhere in a civilian capacity. On returning in 1944, I re-established myself on my farm here (Williamstown) at the junction of Massachusetts, Vermont and New York. I have a hundred-acre farm; hogs, Belgian Hare and chickens. I cultivate about an acre of garden and feed crops and rent out 95 acres to a neighboring farmer for cow grazing.

"I make short trips to Boston and New York every few weeks and usually take a short sea trip in the spring; the last two years to Guatemala, which I recommend as the most interesting country in Latin America with the possible exception of Peru. I have just returned from my latest one. I am looking forward to our 50th re-

union and hope that it will be at a place not too near Boston."

Mrs. Peterson and I, after being in Boston for the Convocation, drove down to Harwichport on the Cape, to call on Roger Wight and Mrs. Wight. We had no difficulty in finding his house as we knew the street and followed it along until we saw a neatly cut out metal sign, topped by the profile of a ship, which read: "Roger Wight — Real Estate." As you know, Roger has retired; and now will try to make a few commissions selling real estate. Mrs. Wight is a very talented artist and was out sketching when we arrived, but, fortunately, returned before we left. In the meantime, we had an enjoyable talk with Roger during which he showed us a number of paintings by Mrs. Wight, both in oils and watercolors. Mrs. Peterson, an artist herself, was particularly interested, and appreciatively pointed out some technical details to us. We were glad to find Roger looking fit again after his recent illness.

I report with regret the death of Ralph S. Loring on May 15, 1948. The only information that we have about him is that he was a member of R. S. Loring and W. D. Chandler, Los Angeles. He resided at 1311 North Lotus Street, East San Gabriel, Calif.

A note from William Blauvelt says: "I expect to spend the rest of my days here in Southern California, in spite of the much advertised cold weather of last winter." He lives at 8055 La Jolla Shores Drive, La Jolla, Calif. — Joe Evans writes in part: "I am sorry that it has been so long since I received your nice letter of February 3. Don't know how the time passes. Now that spring has come I am having the thought of a vacation in New England this summer. I enjoy a sailboat and wish that you would tell me about Duxbury, Mass. Are secondhand small boats available? Are there places to stay? I surely have enjoyed your letter. I often long to be in New England at Christmas, especially in a small country town. I haven't decided just where I want to build my bungalow; Arizona or perhaps in New England on the seashore. Tucson is very nice but it is costly there now. A friend of mine here, who has spent four winters in Tucson, has decided to go to another place next winter. I moved from Hickory Street the last of December."

A note from Ted Lange reads in part: "Sorry I did not see you [Mrs. Peterson] and Guy at the Convocation. I took in all the events and had an excellent seat for the Churchill and Stassen events in the 1st balcony opposite the speakers. The Inauguration was impressive. You will note from the enclosed circular that Dr. Killian was with us a few days later at our club. The affair was a success; attendance, 98 including guests. A few members of the Hartford Club were there, including Malcolm Wight '06, brother of Roger."

The following is from Everett Marsh '02, Washington, D.C.: "At the start of the war I got a berth in the Office of Public Works here in the Navy Yard at Washington as chief electrical engineering draftsman when the staff of half a dozen was increased to three dozen or more. We prepared the complete plans for all sorts of



naval construction in this part of the country and in some cases there were more than 50 sheets of blueprints. When the war ended I transferred to the Veterans Administration where, in addition to the electrical work, I re-entered the classroom to teach a group of G.I.'s (taken on as apprentice draftsmen) physics and engineering mathematics. It was a pleasure to do this as the men were old enough to appreciate the opportunity of going to school, and their previous education had not gone beyond the grades or the high school. A year later they were at ease with everything this side of calculus and were as fine a group of junior engineers as one could ask for. When I retired nearly two years ago, the students gave me a fine portable radio and my confreres put on a farewell luncheon.

"About a year ago I drew up plans for the enlargement of my small cottage on the shore of Chesapeake Bay, got a contractor and started construction with the least delay. The result is a spacious six-room villa, complete with fine bath, four fireplaces, and garage, overlooking the Bay 100 feet below and 500 feet away. The place with its large porches, screened and glassed, and delightful surroundings, located at Scientists Cliffs, Calvert County, Md., tempts me to make it my year-round home."

It was a pleasure to hear from Carl Johnson who writes as follows: "I have misplaced the questionnaire you sent but after all there is no important change to be registered from that of last year, and this letter will testify that I am still alive and kicking. On June 21, I will have attained the age of 70 years, which is more than I had dared hoped for when I walked down the steps of the Rogers Building with my diploma in hand. Speaking of this sheepskin, it was burned in the San Francisco earthquake and resultant fire in 1906. My home, near the corner of Jones and Post streets on Post Street, was considerably wrecked by the quake and later burned to the ground, as did my office and warehouse, each a mile apart. My carefree existence almost ended then and there; a fifteen-pound brass sample reducing valve resting on a shelf fell and just grazed my forehead as I ran from one room to another. Had I been an inch or two farther along it would have crushed my skull. Emerging from a mess of plaster and bricks, I reached my office on New Montgomery Street in time to save important papers before the fire reached that point. The warehouse on Third Street was already cut off from me by the fire. There was terrific damage done by the earthquake before the fire covered up the evidence and graciously enabled the city to refer to the great San Francisco fire instead of the earthquake."

We have received from Mrs. Gilson the sad news that Henry R. Gilson passed away December 30, 1948, following a cerebral hemorrhage in 1944. He was formerly a mechanical engineer but retired several years ago. He lived in Groton, Mass. — GUY C. PETERSON, *Secretary*, 788 Riverside Drive, New York 32, N.Y. THEODORE H. TAFT, *Assistant Secretary*, Room 3-282, M.I.T., Cambridge 39, Mass.

A very interesting letter came to us through the courtesy of Professor Hayward '04, from F. D. Kehew, III, who has been with The Messina (Transvaal) Development Company in South Africa. We quote it in part: "I am the only metallurgist here in the smelting end, and realize that metallurgical men are probably scarce." He is trying to find a man to take his place as he is gradually losing the use of his legs. "About every six months I go to Johannesburg and get a course of injections from a fully qualified Chinese doctor. These buck me up for a time, but I am afraid the effect is only temporary. I may come over for a check on the diagnosis after my retirement. I do not expect to live in the States again, as most of my friends are here. I run my house with three servants; cook boy, house boy, and garden boy. The total cost, including food, is about \$40 per month. Compare that with what it would cost one in the States and you will see that living is quite reasonable here. My only son is now in Washington with the E.R.A., and I gather that he expects to make his home in the States."

William E. Stanhope, IX, died in Newport, R.I., Hospital on December 5, 1948, after a brief illness. After graduating with us, he attended Harvard Dental School and practiced dentistry in Newport for many years. He was retired at the time of his death. He leaves his wife, the former Katherine Cozzins, and a son, Commander William E. Stanhope, Jr., of Haverhill, Mass. — We have just received a brief announcement that Roland H. Camp died on August 15, 1948. He was affiliated with our Class, and lived in Waterbury, Conn.

D. S. Reynolds, II, has been appointed New England Representative of the Gas Machinery Company of Cleveland. He has been with the Boston Consolidated Gas Company for many years. Atwood and McManus Box Company, a part of New England Box Company, since 1927, had a good writeup in the Chelsea, Mass., *Record* last October. I. F. Atwood, II, has been with this concern since graduating from the Institute, and is now a vice-president. A picture of the plant, which was rebuilt after the great Chelsea fire of 1908, shows it to be a large and modern factory, said to be one of the largest and most complete box manufacturing plants in the country. Myron Clark, V, seems to be one of the busiest men of the Class. We read of his appointment by Governor Bowles of Connecticut, to a committee of three to advise and assist him "in formulation of policy to define and clarify the responsibility of the state of Connecticut as an employer." The committee has been tentatively named State Employers' Security Opportunity Program Committee. A formidable name, and apparently a formidable program is laid out for the committee. Clark also led the discussions on "Human Relations in Business and Industry," a course of eight meetings sponsored by the University of Massachusetts, in co-operation with the Associated Industries of Massachusetts, at Hedstrom-Union Hall in Gardner, Mass., in March and April.

During the Mid-Century Convocation in April, a luncheon meeting of the Class was

held in Boston to discuss ways and means for starting our 50-year gift to the Institute. The following men were present: P. R. Parker, T. E. Sears, H. C. Merrill, R. J. King, R. Livermore, A. H. Eustis, M. H. Clark, J. J. A. Nolan, C. F. Green, J. F. Ancona, H. F. Peaslee, L. B. Gould, W. Whitehead, and the Secretaries. The subject was presented and discussed, and the tentative proposal of districts and committees presented by the Secretaries was approved. It is proposed to contact every member of the Class personally, by means of members of committees located in geographical areas where our classmates live. The district chairmen are being contacted, committee members suggested, and a list of all members is being supplied each chairman. We have four years to collect whatever sum we can as our 50-year gift. All are asked to reply to their district chairmen's letters. Let's all get behind this, that we may make a good showing in 1953.

As we are finishing these notes, we have received a note that Montague Ferry, VI, died in Florida on April 11. Further details may come to us later. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston 9, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

## • 1905 •

Seventy-one per cent of those who returned the questionnaire on the matter of holding a reunion this year voted in favor of postponing it until next year and making an all-out effort to make our 45th in 1950 a standout. Surprisingly, a larger percentage (not much difference numerically) favored a mid-point such as Old Lyme, Conn., over our more recent Cape Cod site. This means that as complete an expression of preference as possible is advisable in determining the place for next year, together with the timing in relation to Alumni Day. This requires the assistance of a willing-to-work committee and your Secretary invites nominations and suggestions. Since a selection at an early date is necessary, please rush your reply.

Clarke Warren, answering an assignment given him while in Boston, reports on Charlie Rodgers, II, and Pete Harvey. He finds that both have had slight shocks and are presently vacationing from business. We had heard this about Charlie some years ago, but could not get confirmation. As to Pete, it's difficult to think of anything which could keep him down. Here's hoping and betting that he will turn up on Alumni Day. Bill Becker, VI, who was Pete's roommate during part of their years at M.I.T., arrived from Chicago recently, giving us short notice, but we managed to get together a quintette; Henry Buff, John Damon and Sam Shapira, at Thompson's M.I.T. rendezvous. Jim is in the electrical engineering and contracting business, continuing a business handed down from his father and brothers, and now Jim is "easing out," leaving the major responsibilities on his son. His objective in Boston was attendance at the National Convention of Boy Scout executives, in which organization he has been a commissioner for 25 years. One of his Eagle Scouts, now a student at

M.I.T., conducted him through the "new Technology." "They've done a lot since my last time here in June 1905" was his conclusion. He showed the proper credentials to admit him to the great-grandfather class. Speaking of grandfathers, Dave Bridges reports that when I missed him in Baltimore in April he was in Buffalo to see his first granddaughter. Dave says he is in retirement and likes it very much, also the granddaughter.

Courtlandt Babcock, VI, who retired from Westinghouse during the past year, was recently hospitalized with a major abdominal operation but appears well on the road to recuperation and was hoping to be around on Alumni Day.

Professor Irving Crowdry, II, retired from the Faculty of M.I.T. in June. The Mechanical Engineering Department gave him a farewell dinner at the Graduate House on May 23. Your Secretary and Doc Lewis attended as class representatives. Irv stood up well under the verbal bouquets sent his way, also a series of gifts, consisting mostly of smoking material. In his response he stated that his retirement was permanent, except in the case of an emergency; he had an objective, the building of a hothouse. Urged to give a sample of his poetic accomplishments, he recited two short verses, one philosophic, the other humorous. Suggest we make him class odist for our 45th. Consecration to duty and a keen desire to give of himself unstintedly to his students were emphasized by his colleagues. Those of you who have our Ten Year Book should read again his statement there. It simply means that he continued to give for 34 years more the things which so endeared him to his students. — FRED W. GOLDTHWAIT, Secretary, 274 Franklin Street, Boston 10, Mass. SIDNEY T. STRICKLAND, Assistant Secretary, 69 Newbury Street, Boston 16, Mass.

## • 1907 •

On April 29 at the Silver Room of Walker Memorial in Cambridge, ten of us assembled for dinner and a few hours of good fellowship. The following men were present: Dick Ashenden, Clinton Barker, George Crane, Seymour (commonly known as Bill) Egan, Tom Gould, Alexander Macomber, Bryant Nichols, Bob Rand, Gilbert Small, Oscar Starkweather, and Phil Walker. After the dinner, the quite recently prepared colored film, "M.I.T. in 1948," was shown, and then the Secretary told a few facts regarding some of the men of our Class and also commented on the progress of the Alumni Fund and on plans for our class reunion. Then Alexander Macomber, who is a member of the Boston Port Authority, told in a most interesting and informing way of how it came about that he was appointed a member of the Authority and of the present accomplishments and future program of this body which has as its purpose the development of the port of Boston. Mac also entertainingly described some of the incidents which took place in connection with the inauguration of Dr. Killian as president of the Institute when Mac was the marshal of the large group consisting of presidents and other

representatives of many colleges and universities throughout the entire world. He also told us something of the plans of the committee which has charge of the raising of \$20,000,000 for the Institute. Mac is vice-chairman of the subcommittee which is particularly interested in securing gifts from the hundreds of trust funds which are in existence in various parts of the United States.

An article in the Newark, N.J., *News* of February 27, 1949, told of the activities of our classmate Cyrus H. Loutrel, who was associated with our Class for two years in the Course in Naval Architecture, and whose present home address is 270 Irving Avenue, South Orange, N.J. I quote from this article: "Cyrus H. Loutrel typifies the citizen who turned to politics after first making his mark in the business community, an exception in the American political scene. . . . Familiarly called 'Cy' by his colleagues, he turned to the Essex County Assembly ticket in 1944 when he retired as president of the National Lock Washer Company of Newark and assumed the chairmanship of the board. He had been affiliated with this company for 33 years. . . . Unlike many men when they pass three score years, Loutrel knows how to enjoy life. Whether it is sailing, fishing, hunting, or gardening, all of which occupy much of his attention at his summer home on Mason's Island, Stonington, Conn., he pursues all of these diversions with zest. Racing his 26-foot sloop in East Long Island Sound is one of his principal hobbies. . . . He took his early education at Carteret Academy, studied two years at . . . Technology, and was awarded an engineering degree at Sheffield Scientific School at Yale University in 1907. His first job was in the shop of the American Pulley Company in Philadelphia, where at the end of four years he was assistant superintendent. In 1911 he transferred to National Lock Washer Company, where seven years later he became president. He is a life member of the American Society of Mechanical Engineers, vice president and a member of the board of managers of Half Dime Savings Bank of Orange, director of the New Jersey State Chamber of Commerce, and a Fellow in Perpetuity of the New York Metropolitan Museum of Art. This latter title means that a forebear in the male line of his family, to wit, his grandfather, was one of the founders of Metropolitan."

A news item in the Norfolk, Va., *Virginian-Pilot* of February 24, 1949, stated that on the preceding day Vice Admiral Emory S. Land, U.S.N., retired, who was associated with our Class as a naval constructor after his graduation from the United States Naval Academy and who received the degree of master of science from the Institute in 1907, was elected to the board of directors of the Newport News Shipbuilding and Dry Dock Company. Land was wartime chairman of the United States Maritime Commission, chief of the War Shipping Administration, formerly a naval constructor, and at one time chief of the Navy's Bureau of Construction and Repair. He served as assistant chief of the Bureau of Aeronautics during the Navy's early plane-carrier days and became president of the Air Transport

Association of America upon his retirement from the Maritime Commission. He has been honored in the United States, France, and Great Britain for his promotion of military and commercial aeronautics, holds several honorary university degrees, numerous decorations from foreign countries, and is a past president of the Society of Naval Architects and Marine Engineers.

E. Leon Chaffee, who is professor of physics at Cruft Laboratory of Harvard University, was appointed chairman of the department of engineering sciences and applied physics at Harvard on February 27, 1949. — Milton MacGregor of Brewster, Mass., has notified me of the arrival on January 10 of his sixth grandchild, Charles Arthur Crooker, son of his daughter Elizabeth and Rev. Charles W. Crooker of Portland, Maine. — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. HAROLD S. WONSON, Assistant Secretary, Commonwealth Shoe and Leather Company, Whitman, Mass.

## • 1908 •

The Class was well represented at the Mid-Century Convocation, March 31, April 1 and 2. Unfortunately, quite a few didn't register so the following list of those attending is probably not complete: Dana Clark, Jim McGowan, Harold Osborne, Bill Taylor, Jim Hale, Harold E. Weeks, Miles Sampson, Jeffs Beede, Frank Towle, George Belcher, Leslie Ellis, Linc Mayo, Bill McAuliffe'09, Myron Davis, Doc Leslie, Nick Carter, George Freethy.

The final dinner meeting of the Class for the 1948-1949 season was held in the Silver Room, Walker Memorial, on May 17 at 6:00 P.M. The following were present: Linc Soule, Harold Gurney, George Belcher, Myron Davis, Winch Heath, Joe Pope, Linc Mayo, Bill Booth, Leslie Ellis, Bill McAuliffe'09, Joe Wattles, Jeffs Beede, Sam Hatch and Nick Carter. Joe Pope very kindly flew over from New York City to be with us and show Kodachromes and black and whites which he had taken during the summer of 1947 in Brazil and Turkey. The pictures were excellent and Joe's comments most interesting. Many thanks, Joe.

The Sun of May 17 reports that William B. Given, Jr., President and Director of American Brake Shoe Company, has been elected a trustee of the Dry Dock Savings Institution. — Oliver S. Jennings, assistant to the engineering manager, Westinghouse Electric Corporation, Beaver Plant, was honored recently by his friends and associates at a dinner upon his retirement from active service after 39 years. He started as an apprentice with Westinghouse in 1910, later becoming a design engineer on fan motors. In 1918 he was appointed chief engineer of the Krantz Manufacturing Company in Brooklyn, a subsidiary of Westinghouse. When this company was absorbed by the parent company, Mr. Jennings retained his position as manager of the safety switch and panel board engineering. When the various activities of the company were consolidated to form the standard control division, he became assistant to the manager of engineering and held this position up to his retirement.



We have the following changes of address to report: Mortimer P. Burroughs, 1308 McKnight Road, St. Louis, Mo.; William C. Folsom, 40 Carroll Street, Watertown 72, Mass.; Leo Loeb, Loeb and Eames, 57 William Street, New York 5, N.Y.; Lynn A. Loomis, Post Office Box 142, East Orleans, Mass.; Harry A. Rapeleye, The Linton, Apartment 86, 1509 Sherbrook Street, West, Montreal, P.Q., Canada. — H. LESTON CARTER, *Secretary*, 60 Batterymarch Street, Boston 10, Mass.

## • 1909 •

These notes will not reach you until at least two weeks after the reunion is all over and this is the last number of *The Review* for the current year. Hence, we will not be able to make a report until the first fall number in November, and then we will give all the details that space permits.

On May 7, Margaret Finck of New York was married to John F. Davis in the chapel of the Beloved Disciple of the Protestant Episcopal Church, New York City. The bride was graduated from the New York Collegiate Institute. As you all know, John took Course II at the Institute and is a member of the firm, Frank H. Davis Company, paper mill machinery. John and Mrs. Davis plan to live in Cambridge and Hingham. From Paul: "All of you, my classmates, who know me at all well and to whom I have talked at all freely, know that I have at least two hobbies. You know that I am a loyal alumnus of the blessed Institute and that I am a rampant, dyed-in-the-wool Anglophile. I like the British and no particular wonder for Wiswall is a British name. My forebears came to Massachusetts not far from the place where our 40th reunion is being held this year. They came here back in the sixteen hundreds. Another tie with Britain stems from the fact that in my job, back along in New York, I used to buy something like 100 tons of good English mustard every year to give an authentic British tang to some of our products. Then when I went around the world just after the World War I, I saw the British in every port from Yokohama, down the Asia Coast to Singapore and the Dutch East Indies, in British India, through the Suez Canal, up through Italy and France to Britain itself, and I liked them everywhere I saw them. In Britain itself I spent some very happy days. No wonder I took in all the Mid-Century Convocation when Winnie, if I may use so casual a name for so distinguished a man, addressed us. I liked his sturdy appearance, and I liked to hear him speak the King's English. How can anyone who was lucky enough to be in the Boston Garden forget that huge assembly of some 14,000 Alumni and friends as we listened to Churchill's address on 'The Twentieth Century, Its Promise and Its Realization.' I must also mention the session in the Rockwell Cage that included as speakers Nelson Aldrich Rockefeller and a man from British India, Sir Ramaswami Mudaliar, Prime Minister of Mysore, British India. I had seen Nelson Rockefeller in Radio City now and then, but mostly I like to think of the home of his grandfather, Nelson W. Aldrich, our

Senator in Rhode Island when I was in grammar school in Providence back in the Gay Nineties. It was a mansard-roofed, ample structure that housed the Aldrich family and it stood at the corner of Plenty and Broad streets, and the school was in the next block a few hundred feet away. Nelson made a splendid impression on me. He made an excellent address, one that held everyone's close attention. Sir Ramaswami Mudaliar spoke perfect Oxford English that delighted my ears. I cannot see how anything but good can come from the Mid-Century Convocation of the Institute. I must also add that in all the myriad details involved everything seemed to 'click' beautifully, including the arrangements for the meals for that huge throng. Little is said about one to whom we owe an enormous debt of gratitude in arranging the details and seeing that they were carried out so magnificently. I think I speak for all when I pay my respects to Marshall Dalton '15 and his associates. Marshall is listed as chairman of the Committee on Financing Development and he was indeed a key man in the success of the Mid-Century Convocation."

We can all take great satisfaction in the fact that at least three '09 men are prominent in the recent Institute activities. In the April, Number 2, *M.I.T. Development Program News*, there is a photograph of the special gifts committee which includes Tom Desmond, I, and B. Edwin Hutchinson, III. On another page is a photograph of the Committee on Financing Development, and at the head table are B. Edwin Hutchinson, Chairman, and Brad Dewey, X, Vice-chairman of the committee on business corporations.

One effect of the reunion which is most helpful, so far as we Secretaries are concerned, is that we are receiving numerous letters from classmates and these not only renew old acquaintances but help a great deal with our copy for these notes. Here's one from Clif Carter, VI: "I fear I cannot be there for our 40th reunion. My 50th at West Point runs from June 3 to June 7 and as class president I must be there, Deo volente. Tonight I have written eight letters urging classmates to join up for our (maybe) 'Last Roundup.' One less than 50 per cent of our graduating class, U.S.M.A., 1899, are still living. Of course, I have sent out several mimeographed bulletins to each of them but am endeavoring to answer personally by note all replies."

Charlie Radford, I, writes: "I am vice-president and treasurer of The Radford Company, millwork and building material jobbers operating in Oshkosh, Wis., and Duluth, Minn. Besides this, we also have a wholly owned subsidiary, Radford and Sanders, Inc., operating in Baltimore, Md., and Harrisburg, Pa. I am married, have two sons and two grandchildren, one boy and one girl. I guess that just about completes the record. I hope that you all have a wonderful time at the 40th reunion. We surely are getting along in years when such a date arrives. While I cannot make this one, hope that on the 50th I will be able to get out to Boston." On the back of the envelope is a picture of five big trailer trucks with "The Radford Co." in big letters. Looks as if Charlie's company is a big one.

This one is from Harold Sharp, I, who was a quarter back on the football team. "Chill" came, in my prep school day, from Childe Harold and eventually ended up as 'Chill.' It has followed me all over the world. Bender, I, brought it out here and others kept it going. About myself. I retired two years ago and still do not find time for all my hobbies. My older son graduated from Harvard (tried to get into Technology but there was some miscarriage there), went into the Navy School there, and went to the Pacific with the Subs in '42. He is still in the Regular Navy as he cannot make a living to equal it now. The other boy graduated at Trinity and went to the Columbia Navy School where he became an ensign in '43. He got in on the European D Day and had his destroyer blown into two pieces, so they sent him to the Pacific and they wrecked another destroyer under him at Iwo. He got in on the signing at Tokyo Bay but got no wound stripe through it all. My daughter just announced her engagement to a California Tech graduate and will be married in September. My older son and I have started an engineering and construction company with home offices at St. Thomas. It is the Antilles Engineering and Construction Company. He will become active if and when he retires from the Navy. I wish I could be at the reunion but my plans for that have gone astray year after year. I will be in the Virgin Islands on a trip that I cannot postpone. Some day I will make it again. Have made it twice. Best regards to any of the Class who might remember me."

Leon Healy, V, writes from Milwaukee: "I am very much disappointed that Ruth and I cannot attend the 40th reunion at Osterville. We had planned on going to the reunion all year but it so happens that we have two graduations to attend that same week end. Our son Jim graduates from high school and daughter Muriel graduates from the University of Wisconsin. We still remember the good time we had at East Bay Lodge at the 20th reunion and are sorry to miss this one. However, we cannot miss the children's graduations. Jim is to receive the gold medal award for being outstanding in scholastic standing and other school activities. He surely has had a full rounded high school life, having been one of the star football players, captain of team, played on the varsity basketball team and only this spring broke three all-time records for shot-put in the track meets. Muriel did about the same four years ago and was selected from all the high schools in the city to receive the four years' scholarship prize to the University of Wisconsin. I believe that you have met only Virginia, who came with us to one of the reunions at Oster Bay. She is married now and has two lovely children, a boy and a girl. By the way, Virginia was also a gold medal student and won a scholarship to Wisconsin, and graduated a number of years ago. Ruth and I attended the Convocation last month at Cambridge and enjoyed every minute. I saw very few '09 men there. Met George Wallis at a Technology dinner for President Killian and Dr. Compton about two weeks ago in Chicago. I would surely like to be

at that reunion and have a chat."

This letter from Brainerd Dyer, V, gives us a clear picture of conditions on Antigua and Barbados down in the Caribbean. "Somehow or other I didn't have time to write any letters when I was in Antigua. No, I wasn't busy, but we ran into an unusually interesting lot of tramps from all over the world. We spent more time in a motor car than we usually do and I slept more hours per day than it would seem possible for anybody of my advanced years. You would have laughed to see the car we were driving in Antigua. Rented it by the week. It was a pretty good car for that island, but painted in great big letters on the door with a border of swaying palm trees was a sign reading 'Bill's Tropic Tours Taxi.'"

"You really should take your foot in your hand, get on a freighter and do those Islands. Incidentally, there is a book of Alex Waugh's called *Sugar Islands* which does quite a bit toward reproducing the atmosphere. You would lose your mind about Barbados, just because of the carenage which is a narrow cut right into the center of the city. It is just wide enough for two rows of good sized schooners, and it is jam pack full of island cruising sail. It is a real carenage in that you will see a number of these schooners keeled over for caulking and bottom scraping. I saw a colored sailor sitting in the sun with a palm in his hand. First time I have seen anybody sewing sail since I could remember. I had forgotten that so much of the world's freight travels in schooners. Then there were lots of little sloops which are manned by one or two sailors and a pig. They always have the pig along, partly for sanitary reasons, but quite as important as a compass. They don't carry a regular compass on the boat. If they get lost, they tie a rope around Mr. Pig and throw him overboard. He strikes out for land. They follow his direction.

"Before we went to Barbados, I had planned to rent a car to drive around the island. Coming in from the airport, I changed my mind. Of course Barbados is supposedly the most thickly populated island in the world. I have never seen streets so crowded. Negroes on foot, negroes on burros, negroes on bicycles and in motor cars, and hundreds of the little British cars darting in and out of traffic. It is no place for a Yankee to drive on the left side of the street. Of course, Barbados is a relic of the old sugar economy. Sugar is the main crop on the island. The negroes are direct descendants of the slaves that operated the plantations for the wealthy Britishers who owned them. Today they are, according to our standards, badly paid. They do, however, seem to be happy, remarkably clean and reasonably healthy.

"As you know, we have been in Antigua for the last three winters. It is an ideal spot for a vacation, if you are able to furnish your own entertainment. If you will look at the map, you will see that it is one of the most eastward islands in the Caribbean. It is old. It is one of the 'Sugar Islands' with an economy just like our plantations in old South Carolina. Most of the estate houses are in ruins. The

sugar plantations are under the management of a syndicate. The old days passed out forever with the abolition of slavery. If my memory serves me, there are about 30,000 negroes on the island and 300 white people, most of whom live in and around St. John's, the only large town on the island. It is the seat of government for the Leeward Islands, and it suffers today from many of the restrictions which Britain finds necessary to rebuild her economy. The Islanders can't buy what they need from the States, or even from Canada. If they can't get what they want from Britain or the British Islands, they usually go without. What appeals to us is a perfect climate. It is about 80 degrees most of the time with a strong trade wind blowing from over the Atlantic. It is never cold. It is only hot in the sun out of reach of the trade wind. The beaches are lovely, the water is warm. Bathing is superb. The beach at the Antigua Beach Hotel is divided very sharply into a place for surf bathing and a place behind the reef where the water is still.

"Another thing we like about Antigua is the fact that it is a bit of a crossroads in air travel. People destined for Barbados stop off at Antigua for a day or two. As a result, there is a very interesting lot of people, mostly Britishers and Island folks, although the Americans are beginning to 'discover' the Island. As a matter of fact, on the eastern end there is an American club being built, but so far, the place is thoroughly unspoiled. The hotel accommodations are more than adequate and inexpensive. It is fun to wander around St. John with its different shops, different houses, and different ways of living. We will probably be going back next year; not for excitement, but for a real vacation."

We have just received notices of the deaths of two classmates, Francis G. Beliveau, II, and James R. Bancroft, VI. Francis was first connected with '08 but was in '09 through the first term of his third year. He has lived in Melrose, Mass., for a number of years and was employed by the Metropolitan Transit Authority of Massachusetts. He died on March 26. We have been unable to obtain any further information concerning him.

James R. Bancroft died on May 7 while at his summer residence at St. Petersburg, Fla. He was a nationally-known economist and for a quarter of a century until his death was president of the American Institute of Finance. He entered the Institute from Newton High School. Soon after leaving the Institute he rapidly became known as an investment counselor of uncanny insight into business conditions both domestic and international. He wrote year-end reviews of the nation's financial outlook for the *Boston Traveler*, and was in great demand both as a writer and a speaker. He was a director and member of the executive committee of the Newton National Bank, a trustee and finance committeeman of the Maine Wesleyan Seminary and College, and a trustee of the New England Peabody Home for Crippled Children. In 1911 he married Irene Wiley of Ascutney, Vt., whom he leaves, as well as a daughter, Barbara Ann, a student at St. Petersburg Junior College, a brother, Herbert E., of Hing-

ham, and a sister, Jessie Frances of Boston. — PAUL M. WISWALL, *Secretary*, 90 Hillside Avenue, Glen Ridge, N.J. CHESTER L. DAWES, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 285 Madison Avenue, New York, N.Y.; GEORGE E. WALLIS, 1606 Hinman Avenue, Evanston, Ill.

## • 1911 •

Hats off to Ralph Walker, IV, on his election as president of the American Institute of Architects at that group's 81st annual convention held in Houston, Texas, in March! This followed closely on the heels of his election to the Institute of Arts and Letters in February, as recorded in the May issue of the 1911 notes.

General George Kenney, I, as announced in advance last month in the class notes, in late April became the sixth person to receive the General William E. Mitchell Award. The award, given to the American citizen "making the outstanding individual contribution to aviation progress," was presented to George at a dinner given by Aviators Post 743, American Legion, at the Savoy Plaza Hotel in New York City. In accepting the award, which was endowed 11 (there's that eleven again!) years ago by Frank A. Tichenor, publisher of *Aero Digest*, George paid warm tribute to his former commander, Billy Mitchell. He told the 300 guests that the national defense of this country is built on the air power doctrines advanced years ago by General Mitchell. "His doctrines of air power were so sound," George continued, "his vision so clear and his concepts so right, that they finally smashed the barriers of ignorance, intolerance and apathy in time to enable us to win World War II. Today they form the foundation on which we must build our national defense structure if we are to survive as a civilized nation." The award was presented to George for his outstanding achievements in military aviation, particularly his development of the Air Force's Strategic Air Command. In recent weeks George's work with S.A.C. has been demonstrated in the nonstop round-the-world flight of a B-50 and the long-range flights of giant B-36 bombers. We of 1911 salute you, George!

Two more "Junior Eleveners" are in the news. Mr. and Mrs. John Harris Scoville, Hartford, Conn., announce the marriage of their daughter, Isabel, to Stanley L. Peterson on April 23; while up here in the hills of Gardner, Mass., Mr. and Mrs. Stanford H. Hartshorn, X, on May 9 announced the engagement of their daughter, Barbara Ellen, to Francis E. Silva, Jr., son of Mr. and Mrs. Francis E. Silva of Roslindale. Miss Hartshorn, a graduate of Gardner High School and Radcliffe College, was a lieutenant in the WAVES during World War II and at present is registrar of the Garland School in Boston. Her fiancé, a veteran of four years' service in the Army, is a graduate of Harvard College and Harvard Law School. He was relieved from active duty with the rank of major and is a practicing attorney in Boston.



A fine, long letter is at hand from Frank Osborn, III, who is with the Andes Copper Mining Company, spending most of his time in Potrerillos, Chile, South America. He writes: "As it looks now I shall fly up about June 1 from Antofagasta to New York via Panagra and National Air Lines. This is approximately a 24-hour trip, although I have made it in about 22 hours by starting late on this end and arriving on time in New York. I have notified the Alumni Office by air mail that I intend to attend Alumni Day on June 11. [We'll surely be glad to see you, Frank.] I shall be at my home at East Walnut Road, Vineland, N.J., after the first few days and then I hope to be in Boston for June 11 and 12, so if 1911 has any week end plans I'll try to attend."

"My daughter, Alice, graduates from Vineland High School on June 6 and my second son, Charlie (his nickname), will graduate, we hope, on June 19 from Trinity College, Hartford, Conn. Robert, who entered M.I.T. last September, made the grade O.K. during the first term and I believe he will get better in the second term, although the heartless way in which they teach calculus, descriptive geometry and physics can well flunk out a deserving student, as we all know. At times I think he gets fighting mad, but as long as they fight and don't quit, there are hopes. We have had some sickness at Vineland over the years. Things are better now, though. Kind regards and best wishes to you all and I hope there'll be a good crowd of 1911 men at Alumni Day."

Rear Admiral Luis deFlorez, II, United States Navy, retired, was guest speaker at the spring meeting of the Connecticut chapter, National Aeronautical Association, discussing "Synthetic Aircraft." Monk as you know, is president of the deFlorez Engineering Company in New York City and recently was honored, along with Bob Haslam, X, by election as a term member of the M.I.T. Corporation. — Carl Ell, XI, President of Northeastern University in Boston, announced in early May that his institution had received a grant of \$2,500 from the Committee of Permanent Charity Fund, Inc., for free scholarships to deserving students for 1949-1950. It is the ninth annual grant from the committee to Northeastern and authorizes that first consideration be given Massachusetts residents. — Johnny Bigelow, IV, city engineer at Marlboro, Mass., was re-elected secretary of the Rotary Club of Marlboro again this spring. How many straight years is that, Johnny? We've lost count.

With 152 subscribers to Alumni Fund IX, which closed last March 31, 1911 made another fine showing, this being 42 per cent of the 360 members for whom we have good addresses. A geographical breakdown shows Metropolitan New York with 56 per cent leading, Metropolitan Boston with 50 per cent second and the Middle West with 49 per cent third. Here are the figures: Boston and vicinity, 44 of 88; balance of Massachusetts, 8 of 31; other five New England states, 12 of 31; Metropolitan New York, 28 of 54; balance of New York State and New Jersey, 4 of 19; balance of East Coast, 19 of 46; Middle West, 19 of 39; Southwest and

West, 7 of 31; territories, 2 of 6 and foreign, 7 of 15. A fine record, mates!

We're off to a good start in the 1949-1950 tenth annual Alumni Fund, with 54 classmates subscribing \$1,442.50 (an average of \$26.70) during April, the opening month. Remember, we want this year to be 1911's best, as a special tribute to that fine new president of M.I.T., James Rhyne Killian, Jr., '26, first alumnus to head the institution.

Don't miss the first fall issue of the class notes, for it will contain the 1911 story of Alumni Day. Have a fine summer, all of you, and make your plans now to come back to M.I.T. in June, 1951, for our 40th reunion. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

## • 1912 •

The Boston *Globe* of March 24 carried the following account of the honor recently accorded to Jerry Hunsaker, XIII-A: "Dr. Jerome C. Hunsaker of 10 Louisburg Sq., Beacon Hill, noted aeronautical engineer, was today named to a six year term as a member of the board of regents of the Smithsonian Institution as a result of legislation signed by President Truman. Dr. Hunsaker is head of the department of Aeronautical Engineering at . . . Technology. He is also chairman of the National Advisory Committee for Aeronautics, treasurer of the National Academy of Sciences and an honorary fellow in many scientific organizations. Dr. Hunsaker is a graduate of the United States Naval Academy and of M.I.T. He is a captain in the U.S. Naval Reserve and a director in several business organizations. From 1928 to 1933, during the building of the airships Akron and Macon, he was a vice-president of the Goodyear Zeppelin Corporation in Akron." Hearty congratulations!

The products of many Chelsea firms travel throughout this country and some abroad, but few companies can boast of such a farreaching list of sales offices as has the New England Trawler Equipment Company of 305 Eastern Avenue. Products of this company literally sail the seven seas and have been many times around the world. They have sales offices in New York, Norfolk, Jacksonville, New Orleans, San Francisco and Seattle, as well as representatives in Reykjavik, Iceland; St. Johns, Newfoundland; Halifax, N.S.; Lisbon, Portugal; Ijmuiden, Holland; Oslo, Norway; also in South America and China. Outstanding in its field, the local firm has contracts in practically every known country in the world where fishing is an industry of any size and importance. With the end of World War II, American industry looked forward to a long and hard period of reconstruction, but the local firm, under the guidance of Ralph F. Symonds, spread its markets from the normal prewar field around Boston and Nova Scotia to include nations on every continent on the globe. Included among the products manufactured at the Eastern Avenue plant are all kinds of marine deck machinery; such as anchor windlasses, capstans, cargo winches, elec-

trical hoists, rudders, steering gear, trawl winches, Diesel-engine generator-sets and gasoline-engine driven hoists, as well as a complete line of deck equipment for trawlers. For 15 years prior to 1940, Mr. Symonds, President of the concern, operated the N.E. Trawler Equipment Company in East Boston, which served as selling agent for the N.E. Structural Company of Everett. This company went out of business in 1940. Mr. Symonds then purchased the building once occupied by the U.S. Rubber Company and merged the S.P.C. with the N.E.T.E.C. Mr. Symonds, a veteran of World War I, has been engaged in the industry for over 30 years. He is considered by many an authority in his field, having recently received a reward from the Society of Naval Architects and Marine Engineers for a technical paper entitled, "Developments of Beam Trawling in the North Atlantic."

James A. Cook, VI, reports in a letter to B. H. Morash, VI, of Toronto: "I am not trying to establish a record but believe you should be acquainted with the facts from the United States. My younger daughter, M. Susan Hadley, gave birth to a six-pound, twelve-ounce daughter, Elizabeth Enlind Hadley, at Grace New Haven Community Hospital. Both mother and baby are doing well. On February 4, William Tyler Harris, seven pounds, was born to my elder daughter, Mary Harris. Here is a fine baby who now weighs considerably over eleven pounds. The grand total which Hildur and I have reached consists of three grandsons and a granddaughter. It is not a competition." In addition to his duties as grandfather, Jim has been very busy during the past several months with difficult union contract negotiations and dealings with the department of public utilities. He also writes: "The contract negotiation is only one example of how my job conspires to interfere with photography. I have done nothing for several months. My interest continues keen but I am far from being an upper grade amateur. Nevertheless, I talk very good photographs. I am like the poor golfer who converses fluently about the fine points of the game. He turns in a high score but enjoys his golf."

Your Assistant Secretary and wife drove up the North Shore on Saturday afternoon after the Convocation. We stopped at Marblehead for a most pleasant visit with Jim Cook, but, unfortunately, missed the rest of the family. Jim has a fine darkroom and workshop set up in the basement. Later, we called on Charles and Annie Dodge in Manchester. They showed us the nearby shore points of interest and thence to a most wonderful lobster dinner. Charles has a most interesting furniture-making plant which has been in the family for over a hundred years and turns out some marvelous pieces. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston, Mass. LESTER M. WHITE, *Assistant Secretary*, 4520 Lewiston Road, Niagara Falls, N.Y.

## • 1913 •

Twenty-three members of the Class attended some or all of events at the M.I.T. Mid-Century Convocation: Brew-

ster, Byrne, Cameron, Caldwell, Capen, Fallon, Glancy, Harty, Haynes, Howie, Leon Katzenstein, Gene Macdonald, MacKinnon, Mattson, Dan Moore, Murdock, Lee Parsons, Shafran, VanDeusen, Weeks and Johnny Welch. Three of these men, Moore, VanDeusen and Welch haven't been back for a long time. I didn't see Dan Moore, but had nice visits with Don VanDeusen and Johnny Welch. Don is recently out of the Army, and now employed by the Institute, working on the Development Program. He makes his headquarters in New York City, and his work requires considerable traveling as head of the laboratory at Winchester Arms Company. After finishing his World War I job, John spent several years with Florida Industries at Gainesville, extracting wood resin, pine oil and turpentine from old tree stumps. Following that he was in New Orleans for seven years, with his Welch Dry Kiln Company, making kilns for lumber and brick. He merged this business with Standard Dry Kiln Company of Indianapolis, from where John is now running the business. Bob Weeks is doing well with his "Trylon" antenna masts for television sets in fringe areas, 40 miles, more or less, distant from sending stations. These masts are of new and ingenious design, light weight, with very low wind resistance, and are available up to 60 feet in height for mounting either on the ground or on the roof of a house. Bob has astounding enthusiasm and powers of endurance. He recently visited and gave me some very interesting news about Stanley Baxter, '15, III who enrolled with our Class in 1909. Stan was a very likable chap whose youthful exuberance hampered his attention to study and he fell behind. But how he came back! He took his B.S. in mining in 1941, M.S. in 1942 and Sc.D. in 1943. Stan is a consulting mining engineer and his work takes him all over the world. I call this a remarkable achievement, outstanding among all men that I have known. — Bill Brewster was recently made a director of the National Association of Manufacturers.

Now for more interesting notes and letters: Dave Nason, XIV: "After correlating and editing the gossip how about giving Larry Hart a little help in his effort to improve our class standing in the Alumni Fund. You may have to write pungently as some of our affluent classmates have deep pockets and short fingers." Well spoken Dave, our standing in contributions to the most worthy Alumni Fund is frankly not so good. From the flowery pen of good old Ed Hurst, II: "One reason class notes are so brief is because many of us have a multiplicity of interests in a plurality of directions in all three planes; some perhaps in the fourth dimension. You have never hounded us for news; have always been patient and considerate, and it is my definite opinion that when you come to the final act involving 'pushing up the daisies' you will push equally gentle on each and every one. As to children and grandchildren, we have six in our case, including three grandchildren. Fred, it must be in five figures. One of my grandchildren, my daughter Barbara's child, aged six months, can

count up to four with her fingers. Maybe some of my suffering with mathematics at Technology carried through in the mysterious bloodstream of her progenitors. Please accept expressions of my warmest esteem and may you and all our classmates continue to enjoy the vicissitudes and blessings of this terrestrial sojourn." John Hession, I: "The 35th was a dandy reunion but the ranks are thinning. Hope I am given another ten years as I'd like to make them my best." Prescott Kelly, XI: "No new developments except my grandchildren now number six, three boys and three girls. My two children have each produced three." Wood Selfridge, II: "Have been 'activated' from my M.I.T. slumbers and am helping as best I can on the Institute's financing campaign." Allen Brewer, III: "If it's news, I am serving as cochairman for the program committee for the 1949 annual convention of the American Society of Lubrication Engineers, to be held here in New York City next month. Another bit of personal news, I'm a grandpappy for the second time, Terry Allen being born last fall to my eldest son and his wife in Lexington, Ky., where Allen F., Jr., is making quite a name for himself as a painter of horses. You know he graduated from Yale School of Fine Arts in 1942, then was attached to the Air Force Art Center Tactical Command in Orlando. No other news except we are following our stamp collecting hobby eagerly, and making plans for the ranch-type home we will build on the Indian River in Florida in a few years when I retire. Its a great deal of fun anticipating and correcting mistakes beforehand. Incidentally, I completed 30 years of service with the Texas Company in June, which entitles me to their 30-year Hamilton watch." Harold Rand, I: "Since closing my market nearly three years ago I have led a rather active 'retirement.' I have put in about 40 hours per week working for the man to whom I sold my liquor license. This keeps my mind and body busy, keeps the refrigerator full and at the same time there's a freedom from care that I never knew in the grocery business. Have given up golf but find plenty of interest in gardening, fishing and photography. Even had a five weeks' trip to Florida a year ago. And occasionally I scoot down to Stamford, Conn., where my daughter lives with her husband and son; yes, I'm a grandpappy!" Stanley Davis, VI: "I have just returned from a cruise to South America. We sailed on the *Del Mar* of the Delta Line from New Orleans along the east coast stopping at St. Thomas, Rio de Janeiro, Santos, Montevideo and last stop Buenos Aires. The tourist in Buenos Aires, a beautiful, modern, streamlined city, has a picnic with 11 to 15 pesos for a dollar. The native does not fare so well. The way of a dictator seems to be the same universally. Rio de Janeiro, with its most beautiful harbor in the world and its colored mosaic sidewalks, is also plagued with inflation. Brazil has more democracy but less of everything than Argentina. Montevideo is the gem of all South America. The liner was luxurious, the sea was calm and we all had a grand time." Arthur Kenney, X: "What do you mean arrears? Haven't

I always paid my class dues at whatever sacrifice to myself? Or don't your accounts enable you to say? Marion and I have been spending an enjoyable two weeks visiting her mother. We've had the best of luck in weather, and it's been quite an experience for me as I had never seen Florida at this time of year. As you might suspect, I have spent a considerable part of my time sleeping. We got in a few trips: The Bok Tower, The Cypress Gardens and the beautiful Aquamaids, St. Petersburg, and some of the Gulf Keys; but mostly I have enjoyed the sunshine and the soft air and the mockingbirds. These last really put on a show; or at least a concert of extraordinary versatility. Oh! I nearly forgot the orange juice. You were the first one to teach me to consider orange juice as a drink. We have no great news. Marion's operation on one eye came along very well. Another operation on the other eye will have to be done some time. Meanwhile, she is at the thesis stage of getting her Ph.D. in English History at the University of Pennsylvania. Sylvia has the same degree in view at Yale in history of music. She has won a scholarship award for next year at which she and the rest of us are pleased. Stephen has left for the Colorado College of Teaching at Greeley where he hopes to learn to teach English. The old man continues his affiliation with Uncle DuPont and for fun is one of the leaders in a Great Books Discussion Group, a University of Chicago (Hutchins) idea of which you may or may not have heard." Arthur's wife was Marion Coes, 1918. Ed Smith, VII, suffered the loss of his wife on January 16. Ed Corbett, V, has removed from Ramsey, N.J., to La Feria, Texas. — FREDERICK D. MURDOCK, Secretary, Box 788, Pawtucket, R.I.

## • 1914 •

The Review printing schedule calls for these notes well before both Alumni Day and our 35th reunion, but they will not appear in print until these events are well into history. Preliminary sign-ups indicate that this reunion will be one of our largest. Such a statement must be made with one reservation; namely, that it is one of the largest in proportion to the number of classmates now living. The hard hand of time has made heavy inroads in our numbers, and many familiar faces no longer will be with us at reunion times. Ted Krueger is the sole survivor of our four class presidents. All three class day marshals have passed on. On the other hand, every secretary or assistant secretary survives. Perhaps the very nature of their work toughens them for life's work.

One of the nice things about reunion time is that it brings in notes from classmates who may not have been heard from since the previous reunion, or at least for some years. There is Henry Gardner, for example, last recorded as being in Nevada. He is now back in Los Angeles and is with the Steel Framing and Building Corporation. Henry says that his company has plastered the West Coast with Quonsets and sidewall buildings. His only complaint is that he was out of commission



for two months with heart trouble, but he is happy to be back on the job full time again.

Thorn Dickinson, who is resident engineer for Stone and Webster on a big power station job in San Francisco, reminds us that he is still an eligible bachelor, not having been fooled even once. — Also from the West Coast, Harold Mayer calls attention to the fact that he can claim fame with O. C. Hall. He, too, has a young son three-and-a-half years old who keeps him plenty busy. Mayer still follows the academic path by being a school teacher. All three of the above lament the fact that distance will prevent them from coming east to the reunion.

It will be recalled that for many years Phil Morrill was in St. Louis with Bemis Bro. Bag Co., of which organization he is a vice-president and director. Now stationed at the Boston office, he quickly got back into alumni affairs and soon became a member of the Alumni Council. Phil has just been elected a member of the Council Executive Committee. — Dean Fales says that he is coming to the reunion to get into training for the following week end, at which time his son, Dean, Jr., will be married to Ann Reimer, daughter of Mr. and Mrs. Charles P. Reimer of Beacon Street, Boston, and Kennebunkport, Maine. Miss Reimer is a graduate of Miss Porter's School at Farmington, Conn. Dean, Jr., was with the Army Combat Engineers in Europe during the war and currently is a senior at Boston University.

Levi Bird Duff, who for some years has been director of public works for Allegheny County, fears that the pressure of the many jobs he has at hand will prevent him from attending the reunion. He writes in part as follows: "With a force consisting of less than one-half the number of competent persons required, I am trying to get caught up with a number of the war deferred public improvements in this County. In addition to about a dozen little \$200,000 jobs, I have under design and construction two major bridges across the Monongahela River in the vicinity of Pittsburgh, each of which, with its approaches, is costing more than \$6,000,000. In addition to this, I have a three-and-a-half mile airport parkway, a divided highway giving access to the new Greater Pittsburgh Airport, which is costing a million dollars a mile. Main superstructure steel on each of the bridges is now being erected and all I have to do between now and August is get about \$6,000,000 of approach work designed and under contract in order to keep these projects moving. When and if I can accomplish this I have planned to take a long deferred motor trip with Mrs. Duff to California, Oregon, and so forth, where I have not been since I was about seven years old. You may recall that I was born in Portland, Oregon, during the temporary absence of my parents from Pittsburgh."

Dr. Horace Stewart, who associated with both '13 and '14, finds the time of the reunion a rather bad one for him. He is very busy practicing pediatrics in Cincinnati and says that the reunion comes at one of the busiest times of the year because of the necessary physical exami-

nations in connection with the summer camping season. — Lyman Baird had expected to attend the reunion, but matters pertaining to his business have piled up just ahead of the reunion so he wrote that his attendance had to be considered uncertain. Baird started out with General Motors and then had to return to St. Paul because of his father's illness, eventually ending up by taking over the funeral business in which he has remained ever since. He has served in the national association and last year was elected president of the National Selected Morticians. This is the top honor in the industry. It has required a great deal of traveling, including a recent trip through the Midwest and Pacific Coast areas. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. C. P. FISKE, *Assistant Secretary*, 1775 Broadway, New York 19, N.Y.

## • 1915 •

For this season, this is our last column of notes. The main urge is to get in your check for the Alumni Fund before you leave for your summer holidays. 1915 has an unusually large and active reading public — I mean among many other classes — so let them see your lights shine that all M.I.T. may know your good works and glorify in them. — You'll be glad to know that Harold Colby has recovered from a long, critical illness and is now recuperating at home, 71 Waldeck Road, Milton 86, Mass.

Wives of 1915 — take heed from Hope Holway (Mrs. William R. Holway), who writes from 302 East 18th Street, Tulsa 14, Okla. Go, thou, and do likewise! "Our firm is busier than ever. We are repeating the Spavinaw Water Project for the city of Tulsa that we did 25 years ago; a \$15,700,000 project at this time, duplicating the pipeline and building another dam and reservoir. We are also recommissioning a steam plant (war asset) for the Grand River Dam Authority, which means lots of new work. With other municipal work in water and sewerage and electrical work for R.E.A.'s in this area, we are on the jump. The two boys (William N., M.I.T. '42, and Donal K., M.E. in Electrical Engineering, M.I.T. '47) are taking a very heavy burden off the shoulders of the 'old folks' and are a credit to their upbringing. They are all members of the M.I.T. Club of Tulsa and they are having some good meetings now." Thank you very much, Hope, it's stimulating to read of your family and its success.

Ben Neal surely enjoyed his Convocation visit and we all were glad to see him in Boston: "I certainly had a grand time in Boston and enjoyed every minute. It makes the old blood surge through your veins like a child, to get back there and see all the old gang. I don't see any way that I can get on for Alumni Day in June, although I do hope I can get on to Boston sometime during the summer. Bill McEwen just called me up this morning and wants me to come down and spend the week end with him, which I plan to do."

On Friday evening, May 13, Bill McEwen's son, William R., Jr. (M.I.T. 1948),

was married to Priscilla Chaplin Lerner at the Hancock Congregational Church, Lexington, Mass. Clive Lacy's son, Thomas B. Lacy, a classmate of Bill McEwen, Jr., was an usher. We saw Bill and Helen while they were in Boston. Among their guests were Ken and Esther Johnson. This is the second time within a year that Ken and Esther have come all the way up to Boston from Norwich, Conn., where they hibernate. With this revived interest, Ken promises to make our 1950 reunion. Max Woythaler and Weare Howlett are working on a suitable location for that party. The first committee meetings will be held next fall, so get ready for the big news.

Leave it to Swift — a promoter and a politician, to court favor with Mr. Churchill! "Sorry this must be a hasty line. I am supposed to go to Mary Hitchcock Hospital, Hanover, N. H., for my eye operation tomorrow (May 17). (I'm glad to report Herb's eye operation was successful and his trouble has been corrected, with improved sight. All the best to him!) How did I get on the special gifts 20 million dollar committee at Technology? Just got another letter today with names, none of whom should give less than a million, and ranging as high as two-and-one-half million dollars. That's some money for a New Hampshire farmer to think about. By the way, I presented two cans of maple syrup to the Rt. Hon. Winston Churchill while he was in Boston. Now that he has returned to Bonnie England, I have a thank you note on House of Commons stationery. When we meet in June I have a 1949 calendar with all of the Morrison boys (football players of Concord, N.H.) to exhibit." Knowing his taste in art, best exemplified by his origin of the famous slogan "Help Azel," it will be interesting to see Speed's new calendar of the athletic Morrisons.

Hidden behind the lines of Pellian T. Mar's letter from Shanghai, dated April 15, is a touching pathos of what he and his family must have suffered through during the Red war in China and the attack on Shanghai. Pellian is a top ranking vice admiral in the Chinese Navy. I am most proud of the picture of Mrs. Mar and him. We have had his son, Gilbert, home for dinner and find him a likable chap. Nineteen years old, he's a graduate of the National Mercantile Marine College at Shanghai and was a junior lieutenant in the Chinese Navy. He's on the freshman tennis and swimming teams. Flying here last September from China, he deserves credit for his courage and determination. He fears for his family in the attack on Shanghai and feels they may be driven into Formosa or Fu-Chow in Southern China. Pellian has a married daughter and son living in Shanghai and another married daughter, whose husband is a captain in the Chinese Air Force, living in Formosa. Certainly our sympathies and concern go out to this fine family for their sufferings and sacrifices in their war-torn country. I have written Pellian with the hope that the letter gets through to him.

"It has been quite a while since I heard from you last. I hope this letter will find Mrs. Mack and your good self enjoying the best of health. I regret very much

that I was not able to attend the Inauguration of President Killian, but I have read with a great deal of interest and pleasure an account of the occasion in the *Time*. You will be glad to learn that my son, Gilbert, is now matriculating in the Institute in Course XIII-C and is staying in one of the dormitories. You must have heard a great deal about Chinese political strife. The peace conference between the two powerful political parties now being held in Peking is coming into a crucial moment. The Chinese people are watching the development with keen interest and hope that it will be a peace, which will bring about real peace, prosperity, and freedom of pursuit. I am sending you a photograph of my wife and me, which I hope you will keep as a remembrance from a sincere classmate."

We've just received notice of the passing of these classmates. Unfortunately there were no details. Our sympathies to their families: Will P. Watson, 346 Dick Avenue, Hamilton, Ohio, December 20, 1948. Reuben Burton, Box 56, W. E. Station, Richmond, Va., March 18, 1949. Colonel Gerald B. Robison, 280 Glenwood Road, Ambridge, Pa., February 22, 1948.

So here endeth our column for this season. Any classmates in or near Boston this summer, be sure to see me. Telephone LOnwood 6-3438. A happy and enjoyable summer to you all. — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

## • 1916 •

Here we go for the last column of the season. Sorry to report that your letters have not been as plentiful as during the rest of the season, but considering everything, we have little to complain about.

The most recent activity about which we report before going through the month's mail is the first class luncheon held in Boston on Tuesday, May 10. This, you know, is to be a monthly affair, second Tuesday of each month, Thompson's Spa, Washington Street, opposite the *Globe*, any time from noon to 2:00 P.M., but with particular emphasis on the 12:30-1:30 period. Our last-minute telephone notices rounded up Steve Berke and Joe Minevitch, along with your Secretary, plus a great many expressions of interest but regrets at the late notification. For the next few times, at any rate, those in the Boston area will receive written announcements and anybody of 1916 in the Boston environs at that time will be most welcome. Steve, Joe, and I had a very pleasant luncheon and hope these round-table lunches will be well attended in the future. Steve and I decided that Joe had really arrived since he reported high blood pressure. Only plutocrats can afford that!

Your Secretary also attended a meeting of the Tech Show Advisory Council with the management for next year's show. From all reports the production in 1949 was a great success both artistically and from the financial point of view and the boys are looking forward to a successful year in 1950. There is some talk of having a Tech Show reunion next winter.

And now to our rather depleted mail bag. We shall deal with two reluctant cases first. Edward O. Holmes, Jr., of

Malden, whom we prodded several times for news, informs us that since his family is already associated with five other colleges and since he only took a few courses at Technology after graduating from Harvard, he does not consider himself a proper 1916 man. We tend to agree that a sixth institute of higher learning would probably be the last straw and though Ed is, of course, welcome to consider himself a class member, we won't argue the point. However, if he ever hears anything about anybody that would be of interest, we hope he sends it in.

The second case on hand is that of Hazel E. Roberts. Her statement: "I spent only one year at the Institute after graduating from the University of California and I have absolutely no acquaintances left from the year except Mary Plummer Rice of 1915. So, since I'm merely a statistic on M.I.T.'s books, why fill up space with news in which no one is interested?" However, she goes on to give us some highly interesting news of herself which, despite the fact that she considers herself of no importance, we must pass on: "I have been, and still am, teaching chemistry at Berkeley High School in California. My most persistent interest has been travel, preferably to a foreign country. Quite recently I have gotten my private pilot's license, but my flying has not yet taken me very far from home." Thanks for your letter, and by all means let us hear from you again if any news of interest appears.

Charlie Fry, of East Orange, N. J., writes that he has recently retired from politics after serving for 12 years on the East Orange City Council. For the past three years he was superintendent of plants and structures, "which translated means in charge of the maintenance and operation of county hospital penal and office buildings, power plants, sewage-treatment plants and water works."

It's always a pleasure to hear from those of you who have sent in word before. We like to keep up on what happens to everybody, and a contribution every two or three years is one way to do it. Bill Wylde is one of our members doing a repeat performance. He writes that there isn't much more to add to what he has already written, since he is still doing business at the old stand; Deerfield Glassine Company, Monroe Bridge, Mass., "which means a full honest week of work, and playing hard when I play and enjoying life very much." His closing remarks are well worth repeating. He remembers a statement he heard back in his high school days from some philosopher being studied at that time.

"The statement was: 'Happy is the nation that has no history.' That probably expresses my situation as well as anything else. I have no news for you, nothing of any consequence has happened, so I am very happy." And thanks again for the letter, Bill.

And Don Choate comes across with the following from Bridgeport, Conn.: "My two daughters are married. Ann has one daughter and Martha has two daughters. Donald, Jr., is a junior in Yale in industrial administration. I still have my hair, but with that distinguished touch of silver on the sides. Still in the insurance business, but haven't lost any friends as yet!"

A short time ago (wait! 'twas really six years ago) your Assistant Secretary spent a vacation with his family at Marblehead Neck and in the course of events had some traffic with the post office in Marblehead. And now we hear that Frank Chandler has been living right next door to that self-same post office; but it never entered our heads to look around for familiar faces pottering in the garden. Frank writes from that picturesque town: "Apologies for not replying to your last letter but had to make a trip to New York shortly after I received it and could not get you any information before the April deadline. Well, to give you a rough outline: When I left Technology in '16, I went with the Factory Mutual Life Insurance Company where I stayed for about a year. Then I went to New Hampshire as factory manager in a small latch needle factory. Stayed there until World War I came along and went to New York on special submarine detection work in civilian capacity. Worked at this till the war ended. Then started a small development company in Brooklyn, N.Y., with a cousin of mine, designing and developing inventions. Continued at this work until the depression of 1921 put a crimp in this type of business. Went with Frankel Connector Company and stayed with them till 1928. Again business conditions forced me to change. This time I went into the research department of Intertype Corporation in Brooklyn, where I stayed for two years until family affairs caused me to join with J. S. Martin Company in Marblehead. This is a small coal business which was started by my grandfather and didn't interest me before. Looking the situation over, I decided to see what could be done with it and induced them to establish an oil department and took over that branch of the business, selling oil, oil burners, automatic equipment, and heating equipment. This branch of the business does about 60 per cent of the total volume and is increasing each year. Like the work very much and have plenty of time for play. Married a girl from Omaha, Neb., in 1927, have two children, one boy, now 20, and a girl, 14, in high school. The boy took a turn in the Army after he got out of school and after an 18-month hitch went back to college at Northeastern. Couldn't get into Technology because of crowded conditions (they are more particular now than when I got in). Would be glad to see any of the old gang if they come around to this town, and they can locate us very easily as we live next door to the post office."

We continue to get little notes here and there from all over the country in response to our requests. Only recently we had a welcome note from William I. Bowditch in Seattle. He indicates that he has been temporarily retired since the war, during which time he served as engineer, Boeing Aircraft Company, and later with the Seattle Port of Embarkation. Bill says that he is a grandfather (step) of ten and father (step) of six and still hopes the quotient of the former may be increased. Then he goes on to ask: "Why don't more Technology men settle in the great Northwest?"

We have mentioned earlier the accomplishments of Dick Berger in the cancer



research and investigation field, and we have recently been mailed a copy of a reprint from the *North American Veterinarian* which discusses and prints excerpts from Dick's recent report on his findings. The conclusions which he has drawn are quite amazing and we heartily recommend that everybody secure a copy of this publication, April, 1949, issue, and read what Dick has written. Our congratulations on some highly enlightening disclosures.

A front page article from the *Panama Star and Herald* tells us that Meade Bolton has officially retired from Canal Service. The article states that Meade has been in charge of the architectural design of more public buildings in the Canal Zone than any other person. Meade himself writes that he is sorry to go, but that "nothing can keep us from growing older."

Mr.-and-Mrs.-Herb-Mendelson and big-game-fishing are apparently two highly correlated phrases. Herb recently responded nicely to a last-minute call for a story, as follows: "Upon my return to the city yesterday, I found your letter awaiting me. As for my hobbies and civilian life, which is almost but not quite back to normal, there is really very little to tell you. Soon after the war I did have a chance to indulge in one of my hobbies. I went big-game fishing at Acapulco and managed to boat some really nice Pacific sailfish. I must confess that my better half landed the largest fish and probably the most fish. At times like this it's really tough to be honest about it. With spring in the air I am trying to get my cabin cruiser in commission. This would seem to be an indication of either my mental deficiency, or that boating is one of my hobbies. Two years ago I ran the boat through the inland waterways to Fort Lauderdale, Fla., left it there for the winter, and upon my return in the spring, we ran over to Bimini with the hope of hooking onto some really large ones. We had a marvelous trip but the 'large ones' were evidently too frightened to eat. On our return to Florida we cruised around Cape Sable and up the west coast where again my better half outshone me at tarpon fishing, landing four tarpon to my two. They were all over 100 pounds but not record breakers by any means. With two most congenial guests as crew, my wife as navigator, and myself as engineer (what's a captain for on a boat?), we proceeded up north with only minor delays due to faulty engineering construction of the engines. The trip up north took us approximately three weeks and when we arrived at Long Island Sound on June 4 we were the color of Ethiopians. You will note that I have neglected to mention any matters of scientific or engineering interest for I guess we all have our fill of that at times."

We are pleased to note that Ralph Bennett has time to accept the chairmanship of region number six, consisting of the middle southern states of the M.I.T. Development Program. This suggests another instance of a busy man never being too busy to undertake another job no matter how big. (Ralph has consistently been unable to find time to send in any notes for the class column.)

And that, sorry to say, completes our

correspondence received for the last month of this season. There remains the one saddening task of informing the Class that another of our group has been taken from us. William E. Coffin of Melrose, Mass., passed away on March 31. The sympathies of the Class have been extended to the bereaved family.

Please write to either of us sometime during the summer. We now have a total of four months in which to accumulate material for our first column of the next season. Won't all of you send us a note of some kind? See you in November. — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, 463 West Street, New York 14, N.Y.

## • 1917 •

The Newark News carried an article on Ken Lane in its April 10 issue. Ken is technical adviser in the patent department of Wright Aeronautical Corporation at Wood Ridge, N.J., and has been in the flying business since shortly after leaving the Institute. His three sons were in the Air Force during the war, and one of them was shot down over Japan just a few days before the end of the war. Ken spends some of his spare time in his cellar workshop, and comments, like a true engineer on a hobby: "I spend most of my time making additional attachments for the lathe. Some day, I'll really use them."

Richard Lyons writes in from Houston, Texas, as follows: ". . . My primary responsibility continues to be the endless but interesting job of finding oil and gas reserves for Tide Water Associated Oil Company in the Mid-Continent and Gulf states. Though I do not see classmates often, Ras Senter is a faithful caller on his trips from Dallas. Ras generally attends all class functions and keeps in close touch with many of our classmates so his visits here are most enjoyable. However, Houston and M.I.T. have been getting much better acquainted during the past few months due to a series of visits of M.I.T. notables and the gatherings which resulted. Lobby visited us during the latter part of February. His presence brought out an excellent attendance at a dinner meeting of the M.I.T. Club of Southern Texas. While it may get a bit monotonous for Lobby to make these visits, his trip here certainly did a lot of good as it resulted in a rejuvenation of the South Texas Society. Next, Dr. Compton came to Houston on April 8, on the occasion of the dedication of the Monsanto Chemical Company plant which had been destroyed in the Texas City disaster two years ago. Finally, Horace Ford looked in on us on April 22 and, during a luncheon with a small group of Alumni, gave us a most interesting sketch of the recent important developments at the Institute as well as a colorful description of the Mid-Century Convocation.

"These visits stimulated a very apparent renewal of interest in the Institute on the part of the South Texas alumni group. Because of the current expansion of the chemical industry in the Gulf Coast region and with ever-increasing technical de-

velopments in oil producing and refining the number of local Alumni should continue to increase. Likewise, this region will probably send up an increasing number of students. My very best wishes to you and to all old friends of 1917."

Penn Brooks has been appointed chairman of the supplies section of the Joint Research and Development Board headed by Dr. Compton. — Tom Ryan, who has been selling Soundscribers, is to be production manager for a refractory business in Cleveland. — After some very formal correspondence with the proper authorities at the Institute, J. Stuart Crandall has been transferred from the Class of 1927 to the Class of 1917. We are pleased to welcome him back to the fold after his lengthy sojourn (in print) among the '27ers. — George Kittredge is with the Headquarters, U.S.A.R.F. Antilles at Ft. Brooke, San Juan, Puerto Rico.

The news has been received of John Peterson's death, on March 24 of this year, at Bethesda, Md.

We quote verbatim from Rad Stevens' recent letter: "I have just returned from the National Packaging Show at Atlantic City where we were exhibiting. Also from our Class was Howard Stewart, who is now vice-president of Economic Machinery and had a large exhibit, and none other than L. L. McGrady who was in charge of the Eastman space. I had a grand visit with Mac." — RAYMOND STEVENS, *Secretary*, 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, *Assistant Secretary*, 24 Federal Street, Boston, Mass.

## • 1919 •

Ev Doten sent in the news of the passing of Sam Heyman: "Was quite surprised to see this. I know he had heart trouble for years, and assume that was the cause. Saw him about a month ago when he said he was feeling much better. Hope to see you at Norwich on June 25." The note from the *Detroit Free Press* dated April 24, 1949, stated that Samuel Heyman, a mechanical engineer with the Fisher Body Company 22 years, died on April 23 at his home, 4031 Glendale, at the age of 52.

Karl Rodgers sent out the following notice in April announcing their having moved from New York City to the country: "The Rodgers family, Karl, Allegra, Karl, Jr., and Delorma at home, after April 15, 1949, but unsettled, 31 Dunham Avenue, Cranford, N.J." — L. R. Sorenson writes from Newport News that he is cost engineer for the Newport News Shipbuilding and Dry Dock Company and was very busy getting out estimates for the big aircraft carrier *United States* which was canceled several weeks ago, and the *Super Liner* for United States lines on which they finally signed a contract. Sorenson is president of the Newport News Kiwanis Club.

Ray Bartlett's address is 37 Morse Road, Newtonville 60, Mass. Frederick R. Hewes has moved to Route 1, Box 502, Cupertino, Calif.

Your Secretary had lunch with Marshall Balfour one day last week. Marshall had just returned from the Far East and will be here for a few weeks before going to Europe for a three months' trip, visiting all the capitols. He wishes to be remem-

bered to the Class. — Best wishes to the Class for a fine summer. Will be with you again in November. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 420 Lexington Avenue, New York, N.Y. ALAN G. RICHARDS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

## • 1920 •

Since these notes are written prior to Alumni Day, I can't tell you much more about the plans for the big 30th reunion next June except to say that it looks as if it would be the Sheldon House again, at Pine Orchard, and things are shaping up under Al Glassett's able direction. Everything points to the prospect of this being even bigger and better than the 25th, and that's saying a great deal, as those of you who were there will testify. A gathering of interested classmates prior to the Alumni Banquet is helping further planning and organizing and will be reported upon in the next issue of *The Review*. If you have any ideas or suggestions as to how to make this the biggest and best reunion the Class has ever held, now is the time to come forth with them while plans are still in the formulative stage. Write to me or write to A. T. Glassett, Chairman of the 30th Reunion Committee, in care of W. J. Barney Corporation, 101 Park Avenue, New York 17, N.Y.

Raymond S. Perry, formerly president of Eicor Corporation, Chicago, has been appointed general sales manager of Federal Telephone and Radio Corporation, Clifton, N.J. He will direct all commercial activities of Federal which is the American Manufacturing Associate of I. T. and T. Corporation. From 1943 to 1946 Ray was a board member of Olin Industries and in charge of the research activity for Western Cartridge, Winchester Repeating Arms and other companies in the Olin group. Prior to that he was associated with the Ingersoll Milling Machine Company in Rockford, Ill., as vice-president in charge of engineering and sales.

Mel Powers, Commander, United States Navy, retired, now living in Bronxville, N.Y., has a son, David, who graduated from M.I.T. and whose engagement has just been announced. David's fiancée is Mary Ann Berry of Upper Montclair, N.J. H. W. Stiegler recently led a symposium on Finishes at the National Association of Wool Manufacturers meeting in New York. He is director of research for the American Association of Textile Chemists and Colorists. Carl Carlson is now living in Baytown, Texas. Bill Freeman has left Virginia, at least for the present, and is now in Paris at 17 rue de l'Arcade. Cliff Goodrich is now in Pittsfield, Mass., address, 366 Merrill Road. Ted Kendrick has left Richmond, Va., and is in Succasunna, N.J. Constance Peters' new address is 107 Hobart Road, Newton Center. Harold Smiddy has left Pittsfield and is now at 340 Riverside Drive, New York.

Hope you all have a good summer and lots of time off. If you get up this way, I'd like to see you and, in any event, I would like to hear from you. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

## • 1921 •

While attending the convocation and inauguration ceremonies in Cambridge, Ed Farrand revealed his interest in polo, another in the long list of activities of a busy man who, in spare moments, serves as secretary of the United Conveyor Corporation, Chicago. Ed, Mrs. Farrand and David are all accomplished equestrians and Ed may be justly proud of the national championship which his club has just won. Enclosing a detailed account from the *Chicago Tribune* of April 8, Ed writes: "Our North Shore Polo Club won the National Indoor Polo Championship in the Sherman Memorial division by defeating the Eastern winner, the Squadron A Turtles of New York. First, we played the Western eliminations here in Chicago and won. At the same time the Eastern eliminations were being played in New York. Then the Eastern winner came here and we won the first two games — and the title — with scores of 18 to 9 and 20 to 5. This has given me about the biggest thrill of satisfaction I have had in all my life. About a year ago, I started the North Shore Polo Club and have put in a tremendous amount of work on building it up. We now have over 50 members. My official title is manager. In May we started our first paid admission games, which will run into the fall, playing teams from Detroit, Milwaukee, New York, Texas and elsewhere."

Glenn Stanton, Portland architect, was one of 28 distinguished architects honored by election as fellows of the American Institute of Architects at the annual convention in Houston, Texas. The Portland, Ore., *Oregonian* reports that Glenn was selected for the award "for his singular and conspicuous service to his chapter, the Institute and the public affairs of his State. His relations to his fellows and the public are guided by the same sense of fitness as are evidenced in his structures." Glenn, who was also elected national first vice-president of the American Institute of Architects, had successively been designer, manager and partner of two Portland firms from 1922 to 1935 and has since engaged in private practice. He supervised the remodeling of the Oregon Journal Publishing Company building and was associated in the design of the Federal courthouse, the Sixth Christian Science Church, Columbia Villa and other public housing, the new women's dormitory at Oregon State College and many homes, including those for Tom Mitchell, actor, and Ernest Haycox, author. He is senior architect for the veterans' hospital being planned for Klamath Falls. Glenn is a past president of the Oregon chapter of the American Institute of Architects and of the Portland city planning commission. He has also held offices in the Oregon building congress and in theater, library, art, engineering and symphony organizations.

The Newton, Mass., *Villager* carries a picture of Charlie Breed and the new building in West Newton which the C. A. Breed Company has opened to observe its 25th anniversary in the supply and service of oil heating equipment. Built of brick and glass block, the company's new home has radiant heat in the floors and summer air conditioning. Both sidewalk and

vehicle yard can be heated to melt snow. Besides business offices and stock rooms, facilities include 24-hour telephone order service, machine shop, test lab, equipment repair areas and housing for 15 trucks. The company has supplied over 30,000 domestic oil burners and employs 88 service men who use two-way radio in making their rounds which totaled one and three-quarter million miles last year alone. Charlie is a member of Newton Rotary, the Oil Heat Institute, the Massachusetts Oil Heating Association and the National Association of Electrical Inspectors.

Class Agent Lark Randall says the first batting averages for the 1949 Alumni Fund are not bad but still not good enough to win the pennant. Quips Lark: "Some of the boys are hitting the long ball better than in previous years so our RBI column is doing all right. What we need are pinch hitters — a whole flock of them — who can hit for extra bases. Let's see you step up to the plate and knock one out of the park. Old alma mater is back here cheering for you."

Phil Coffin reports that Bill Matthews of Spokane, Wash., was in New York on a business trip, which the local Hexalphas celebrated with a luncheon attended by George Chutter, Dave Woodbury, Bill and Phil. Bill heads the W. R. Matthews Company, manufacturers' representatives with some 40 lines, including Rufe Shaw's Pedrick Tool and Machine Company's products. He and Mrs. Matthews have four girls and a boy.

Tom Bertram, research chemist with the rubber service division of Monsanto Chemical Company, has moved from Nitro, W.Va., to a new home at 1122 Highland Street, St. Albans, W.Va. Walt Church, prominent Portland architect, has a new home at 10943 S.W. Collina Avenue, Portland 1, Ore. Walt Kittredge reports that his mail should now be addressed to Route Number 3, Mt. Carmel, Conn. William D. Morrison, a major in the Army Air Forces, has been assigned to the engineering school at Fort Warren, Wyo., as tactical and operations instructor. Roger Clapp has a new Boston address and Edgar Russell has returned to St. Petersburg, Florida, following his assignment to Stone and Webster's offices in Baton Rouge, La.

Accompanying his annual revision of the slides and films of class history, Bob Miller sent a long detailed letter which says, in part: "I had letters from Bill Sherry and Joe Cartland recently. Joe reports that he experienced something different — infectious hiccoughs — which lasted for 15 days, on and off — mostly on. Joe said he finally got rid of them after using a few million units of penicillin. He must be all right now because in the concluding paragraph of the letter he reported playing eighteen holes of golf."

A feature article in the Boston *Post* quotes John W. Barriger, forthright President of the Chicago, Indianapolis and Louisville Railway, as believing that the "archaic" Interstate Commerce Commission Act should be revamped so that freight rates of the carriers could be made more flexible and, if necessary, reduced in order to attract more traffic. Jack is reported as saying that the present laws



were largely based on correcting abuses of the gay nineties when railroads were in the monopoly classification and that the Commission now has no alternative but to carry them out, regardless of the current highly competitive position with other forms of surface transportation. He thinks existing conditions keep traffic off the railroads and increase their unit cost of doing business. They could operate more efficiently if they were not so hampered in their ability to compete with trucks and waterways and could secure a much larger volume of business, thus obtaining improved earning power with lower rate levels than are now possible. Jack concludes: "Railroads are the low cost producers of inland transportation for distances greater than 150 miles but rate-making procedures that are anchored in obsolete statutes prevent them capitalizing this fact in selling their service."

S. Paul Johnston, former Navy captain and now director of the Institute of the Aeronautical Sciences, contributed to the "First Century of Flight" exhibit, depicting aviation progress in the 100 years between the experiments of the Mid-Nineteenth Century and the penetration of the sonic barrier by the Bell X-1. Known as an author and editor of books and magazines on aviation, Paul is receiving congratulations on the appearance of Volume 1, Number 1 of a new quarterly bulletin, *Aeronautica*, published by the I.A.S.

Sumner Hayward was elected vice-president, Fred Kowarsky a member of the board of governors and George Chutter chairman of the placement committee of the M.I.T. Club of Northern New Jersey at the annual banquet. Among those present were Mor Aronson, Max and Ethel Burkett, Ormond Clark, Cac and Maxine Clarke, Phil and Edna Coffin, Max Goldberg, Sumner and Elizabeth Hayward, Fred Kowarsky, Mal and Connie Nelson Lees, Ed Lockwood and Joe Wenick. Mal and Connie's older boy, Bruce, is studying electrical engineering at Cornell and the second son, Ned, will enter Technology this fall. Elizabeth Hayward, Simmons' 23, is the author of a most interesting 500-page illustrated biography entitled, "John McCoy: His Life and His Diaries" (American Historical Company, Inc., New York, 1948, \$5.00) for which Connie Lees did the end-paper illustration work. The book relates to "The Real McCoy," who had no connection with the feuding family of the same name. It is a rich source of social data on Indiana, Kentucky and Illinois with a great deal of local Baptist history, including the formation of the American Indian Mission Association. The descriptions of the madstone which allegedly cured hydrophobia and how to live in comfortable independence (in 1851) on less than \$200 a year make fascinating reading. This is Mrs. Hayward's first full-length book although she has written several pamphlets on genealogical subjects and has had numerous articles published in a wide variety of magazines and newspapers, besides editing two periodicals.

Alumni Day is not far off as these notes are assembled and the account of 1921 participation will have to await the November issue of *The Review*. A very pleasant summer to you all. — CAROLE A.

CLARKE, *Secretary*, International Standard Electric Corporation, 67 Broad Street, New York 4, N.Y.

## • 1922 •

The New York *News Record* reports that James L. Truslow, European representative of American Viscose Corporation, has resigned to join Saco-Lowell Shops, textile machinery manufacturer, as manager of the foreign sales department. Truslow returned to the United States in May and will make his headquarters in the firm's Boston office. He joined the American Viscose Corporation following his discharge from the Navy as lieutenant commander in 1946. Before the war he had been northern agent for Whitin Machine Works, Whitinsville, Mass. — Samuel M. Seegal, Vice-president and Assistant General Manager of Wm. Filene's Sons Company, Boston, was appointed in March as state chairman of industry and finance for the American Cancer Society's drive for \$650,000. Seegal is also director of the Massachusetts division of the American Cancer Society, a trustee of the Associated Jewish Philanthropies and the Family Association of Boston, a member of the International Panel of Arbitrators and past president of the Belmont Country Club. He also served as a statistician and economist in the office of Herbert Hoover when the former president was secretary of commerce. Sam's wife is the former Martha Paula Lewenberg. They have three children.

Eaton H. Perkins was unanimously elected trustee of Pine Banks Park at a meeting of the board of trustees held in the office of the Mayor of Melrose, Mass., in April. Perkins is a veteran of both wars, having served in the Pacific during World War II. He is co-owner of Deering Lumber Company and director of the Melrose Trust Company, a trustee of the Charlestown Five Cents Savings Bank and past president of the Melrose Rotary Club. He has two sons; Alden M. Perkins, who is associated with him at the Deering Lumber Company, and Daniel E. Perkins, a lieutenant in the United States Coast Guard. — John F. Halpin who is now living in Ossining, N.Y., is back at his New York office with the New York Central Railroad Company following his services with the Naval Reserve during the last war. His terminal rank was that of lieutenant commander. He was stationed at various posts including the Third Naval District and the Great Lakes Training Corps. Halpin is a member of the American Society of Civil Engineers and a licensed professional engineer and land surveyor of the state of New York.

Martin C. Cryan has been made chief chemist of the Eastern Gas and Fuel Associates of Everett. He has been a resident of Lynn for the last 17 years. His son Martin, a first-year student at the Massachusetts State University, has recently been elected to the dean's third scholastic honor list. — George Dandrow, President of the Alumni Association, was a member of the committee that was in charge of the Boston English High School reunion held last May at the University Club. — Harold R. (Bill) Boyer is director of General Motors production engineering section.

Stanley M. Ryerson had two drawings included in the 22d annual exhibit for the Business Men's Art Club of Boston which was held last April at Paine's Gallery in Boston. The drawings entitled, "Cloisters at Tarragona, Spain" and "Interior of the Cathedral" were done in pen-and-ink and wash. Ryerson, who lives at 26 Hopkins Road, Arlington, has also had local exhibitions in that town in the Robbins Memorial Library. — Crawford H. Greenewalt, President of the Du Pont Company was honored in February at the 56th annual dinner of the Penn Charter Alumni Society at the Union League in Philadelphia. Greenewalt was presented with a leather-bound illuminated parchment in recognition of "outstanding achievements which have reflected lasting credit on his school," Penn Charter, from which he graduated in 1918, prior to coming to the Institute.

A picture in the May 5 Boston *Herald* shows Frank H. Wing seated at a desk between four army officers and signing a contract for the Massachusetts Automobile Dealers Association, of which he is president, by which the association agreed to operate a maintenance depot in Hudson, Mass., for the Army Reserve. — A report from Washington dated May 4 reads as follows: "William W. Russell, 61 Colbourne Crescent, Brookline, President of the Boston Apartment House Owners Association for the past three years, was elected president of the National Association of Apartment House Owners at a meeting held today. Russell has been in the real estate business in Brookline for 28 years and is president of the Palmer Russell Real Estate Company. He was elected to fill the unexpired term of the late John E. Owen of Los Angeles. A new president of the association will be elected at a national convention of the group in Boston next October. Russell is a graduate of Phillips Academy, Andover, and of M.I.T. He is married and the father of two daughters."

The 1948 Alumni Register shows the following geographical distribution of members of the Class. This list is probably by now slightly inaccurate but at least will give a general idea of where the men in the Class are. Massachusetts, 312; New York, 178 (New York City, 118, Albany 10, Rochester 10); Pennsylvania, 69 (Philadelphia, 32); New Jersey, 66; California, 58 (Los Angeles 14, San Francisco 12); Connecticut, 39; Ohio, 32; District of Columbia, 30; Illinois, 30; Rhode Island, 20; Maryland, 16; Maine, 14; Texas, 14; Virginia, 12; New Hampshire, 12; Indiana, 10; Missouri, 10; Minnesota, 9; Florida, 6; Wisconsin, 6; Delaware, 6; Georgia, 5; West Virginia, 5; Michigan, 5; Colorado, 5; North Carolina, 5; Kentucky, 4; Louisiana, 4; Tennessee, 4; Washington, 4; Oklahoma, 3; Iowa, 3; Oregon, 3; Arizona, 2; Arkansas, 2; Kansas, 2; Montana, 2; Oklahoma, 2; Vermont, 2; North Dakota, 1; South Carolina, 1; South Dakota, 1; New Mexico, 1; Utah, 1; Idaho, Mississippi, Nevada, Nebraska, Wyoming, 0. It would seem that with over 300 of the Class living in Massachusetts, there should be a heavy turnout from this group on every alumni occasion but, unfortunately, such is not the case.

New addresses: William B. Elmer, West Thornton, N.H.; Homer L. Ferguson, Jr., Mason-Hagan, Inc., 1108 East Main Street, Richmond 10, Va.; E. Randolph Haigh, University Club, 232 Golden Hill Street, Bridgeport, Conn.; James W. K. Remsen, 117 Pecan Street, Terrell, Texas. — C. YARDLEY CHITTICK, *Secretary*, 77 Franklin Street, Boston 10, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

## • 1923 •

The notes will be light this month because they must be written two weeks earlier than usual as I expect to be on the West Coast during most of May. I am pleased to be able to say that the nominating committee, appointed at the last reunion, has turned in a report. The chairman of this committee is F. P. Squibb. The committee has done a good job and is offering a slate of new officers, in line with the official policy of the Alumni Association which encourages the classes to elect officers at least every five years. The committee also proposes that the Class adopt a simple constitution, also in line with practice suggested by the Alumni Association. The report is not so short that it can properly be summarized in these notes and the nominating committee has certain observations to make which ought to be considered in their entirety. This report will be the subject of a special mailing during the summer and I hope we can report results in the fall.

I have Meade Bolton '16 to thank for sending me a copy of *La Estrella de Panama* for April 28. One story in that issue is that Eduardo Icaza A. is one of three official delegates from Panama to the International Congress of Civil Engineering to convene at Mexico City on May 7. Icaza was scheduled to report about work on the Tocumen Airport. Frank Morales, Jr., '39, was also a member of the Panama delegation.

I regret to report that Gordon T. Williams who had been with Pratt and Whitney, East Hartford, Conn., died on September 19, 1948. — HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, 60 John Street, New York 7, N.Y.

## • 1924 •

The New York delegation held its last rally on April 25 for the purpose of raising funds. We are not too sure of just where we stand as our means of communication with those who have signed up were not available at this meeting. Mal MacNaught was in a most generous mood and made a very fine contribution with the suggestion that others do likewise. — As this goes to press I am informed by Chick Kane that the reservations at East Bay Lodge now total 105, and I am sure that by June 8 there will be many more.

Those present at our April 25 meeting at the Engineers Club were: Gordon Billard, Bill Correale, Griff Crafts, B. Cushman, Bill Delehanty, Frank Disomma,

Walt Gress, Ray Hamilton, Julian Joffe, Bill Keplinger, Jake Lurie, Bill MacCallum, Mal MacNaught, Perry Maynard, Paul Miller, Bill Rowe, Gus Rudd, Nate Schooler, Greg Shea, Carl Vicario and Ed Winingier.

Although Walt Gress is a little on the modest side, it was discovered that he was responsible for a donation of \$2,000 worth of equipment for the hydraulic laboratory at the Institute.

Your Committee has done everything possible to plan our 25th reunion and to make it successful. By the time this reaches you it will be past history, of course, but I know that those of us who were there will have enjoyed a very memorable occasion. — FRANCIS A. BARRETT, *General Secretary*, 234 Washington Street, Providence, R.I. WILLIAM W. QUARLES, *Assistant Secretary*, McGraw-Hill Publishing Company, 330 West 42d Street, New York 18, N.Y.

## • 1925 •

Although your Secretary was not able to attend the Mid-Century Convocation, nor witness the inauguration of his fellow-secretary and friend, Jim Killian, as president of M.I.T., he takes this opportunity of expressing his heartiest congratulations to Jim for his well-deserved honor. Surely, becoming president of one's alma mater is the apotheosis of class-secretaryship! We are in a position to wind up this volume with a fairly substantial quantity of news. In fact, if I should send it in at full length, it would probably be bluepenciled heavily! We'll start with an item from the Wilmington, Del., *News*: "Student members of the University of Delaware's chapter of Tau Beta Pi, honorary engineering fraternity, were challenged . . . [April 6] by Charles L. Petze, Jr., Assistant to the President of the National Vulcanized Fibre Co., to use their training creatively — not merely in technical activities, but in all phases of life. Speaking at a dinner in Old College, Newark, which followed initiation ceremonies for 16 new student members and three alumni members of the national society, Mr. Petze [II, S.M., '29] discussed 'The Engineer: Some of His Opportunities and Responsibilities.'" Among the graduate members was Norman A. Copeland ('36, II), who is now studying for a doctorate in chemical engineering at Delaware. I am sending the clipping to Bill Garth, Secretary of the Class of 1936, but in case it doesn't reach him in time, this note may catch the attention of at least a few of his classmates.

My next job is to attempt to abridge a 30 column-inch feature article from the March 13 New York *Herald Tribune*. The article describes a speech made by Cuthbert Daniel, X, before the New Rochelle meeting of the Westchester Society for Ethical Culture. Daniel is the director of the Atlantic region of the Association of Scientists for Atomic Education, and it is said that he manages to spend at least half of every working week lecturing without fee to any and all representative groups that want to hear him in these parts. In collaboration with Dr. Arthur M. Squires, he criticizes the plan adopted

by the majority of the United Nations Atomic Energy Commission because it calls for the building in Russia of large-scale atomic plants to match ours, and for the production of great quantities of a material whose only use can be for atomic bombs. "Even 2000 U.N. inspectors in Russia," said Mr. Daniel (I am quoting from the article), "could not do the job. There would be the constant danger that the plants themselves would be seized by the Russian government, or that fissionable material would be diverted to small clandestine bomb fabrication plants. On the other hand, I would trust 200 U.N. inspectors to check in Russia on the operation of small atomic piles geared to production of isotopes and radioactive materials vital for medical and biological research." In conclusion, he says: "Our aim is not to sell lay and scientific groups our proposal over night. We want them to discuss it." Mr. Daniel and Dr. Squires are writing a book on the subject, the first six chapters of which have appeared in the *Christian Century* beginning with the April 25 issue.

Next we have a clipping from the February 25 Hartford *Courant*. It announces that William H. Storrs, I, was elected a vice-president of the Hartford Special Machinery Company. The following biographical note is supplied: "Mr. Storrs has been with the company 25 years and is the head of the engineering department. He is a graduate of the Hartford Public High School and attended . . . Technology. He resides in West Hartford and is married to the former Margery Steele of Hartford."

The next item, from the Newark, N.J., *News* reports the death of Lieutenant Gaston A. Conklin. According to the report, on March 4, the state police physician said that Conklin had been ailing for five years and feared he was a victim of cancer. The item contains the following summary of his career: "As assistant executive officer since 1947, Conklin was one of the division's chief planners. He took a leading part in the planning of a new building that is under construction at the department's training school at West Trenton. The son of the late Mr. and Mrs. Joseph A. Conklin of East Orange, Conklin entered the state police as a trooper in 1923, became a corporal two years later, a supply sergeant in 1931 and was promoted to lieutenant in 1941. . . . Born in Perth Amboy, Conklin moved to Paterson at an early age. . . . He served at the Mexican border and as a sergeant in World War I. A bachelor, he lived at the training school at West Trenton. His only survivor is his brother [Joseph of Lakeland, Fla.]"

The New York *News Record* of February 28 reports: "Stephen V. Gilligan has been named director of industrial relations of Goodall-Sanford, Inc., a post that has been vacant for a year, according to [the] president. He will assume his duties at Sanford, Maine, tomorrow. A graduate of Holy Cross College and . . . Technology, Mr. Gilligan has been with American Woolen Co. since 1945, when he organized an industrial relations department at the Wood Mill. Previous connections include B. F. Goodrich Co. [Hood



Rubber division]. During the war, he was consultant for several firms." My understanding is that one of these was the Eagle Pencil Company of Brooklyn, N.Y. This concludes the available material.

On May 27 your Secretary starts on his annual vacation trip, back to Massachusetts. Enroute he hopes to talk with Browning in Cleveland, and pick up those lost items mentioned in an earlier issue of these notes, as well as any other news. It may be possible to check in briefly with Tom Price at Erie, and get some idea of reunion plans for the "big one" next June. — HOLLIS F. WARE, *General Secretary*, Post Office Box 52, Godfrey, Ill. F. LEROY FOSTER, *Assistant Secretary*, Room 5-105 M.I.T., Cambridge 39, Mass.

## • 1926 •

A few days before Dave Shepard sailed for London he telephoned from New York to say that he and Jim Killian had discussed the class secretaryship and Jim expressed a desire to be relieved — would I take over? Frankly, I accepted without hesitation, because I have always been so proud of the Class of '26 and its members that to serve you is an honor. To take the reins over from Jim, however, is a real responsibility because he has been so faithful over the 23-year period of ever-increasing responsibility, culminating in his presidency of the Institute. For the Class, let my first action as secretary be a salute to Jim for this long, untiring service to us. I'll not attempt to fill his shoes, but I pledge myself to serve you to the best of my ability.

Problem number one for a class secretary is that of obtaining news items for these notes, and I'll be needling each of you from time to time if you do not contact me. Furthermore, if and when I happen to visit your city, you will receive a call from me, but please do not wait for that call or letter. This column will be on vacation with The Review for the summer, but by fall, I am expecting to hear from everyone of you — if it's nothing more than a card from dear old Coney Island. Let's get acquainted — I know a large number of the Class, but I don't know everyone. Send along a snapshot of yourself and the family, if you have one (I mean snapshot, of course). Let us also make this column a clearing house — tell us from whom you would like to hear, and we will hunt him up for you and guarantee to dig up all of the dirt about him.

At the Convocation and Inauguration we saw more '26 men than since graduation. Jim gave you the list last month of those who attended the class party for him. We bumped into George Leness in the main lobby, headed for — of all places — the Track House. Dick (H. W.) Jones looked exactly as he did 23 years ago; no avoirdupois and plenty of hair, with few gray ones. We did not happen to see George Edmonds at the Inauguration but did see him later and he is another one of those stay-young-looking fellows. We also saw Howard Humphrey in Wilmington and he, too, is holding his youth. By now, you must have concluded that my hair has turned gray; you're right. What did you say about hair, Bill Sessions?

Barry Colt, of Norwich, Vt., showed up on April 2 for the first time in years. He looks very well but hasn't been feeling tops due to a case of malaria he picked up in the Service. Do any of you remember the day he brought his aunt, Ethel Barrymore, into the qualitative analysis laboratory? I was so awed that I never forgot it. One fellow who did not show up at Inauguration was Dudley Parsons of New York City, and what a break for him that we were unable to help him get tickets. He was disappointed, but he later wrote us that he had planned to fly from Midland with Willard Dow. The lack of tickets prevented his joining that horrible tragedy. Ralph Head, who was planning to fly, was grounded by the same bad weather and did not arrive. At the Churchill address we drew seats beside Roger Smith '27 and his wife. We had the same seats at the Stassen address and Roger's charming daughter and son were in his seats. From where we sat in the Garden we could see Art Brockelman waving frantically at us and we managed to bend an elbow with him later; same old Art. Before the Churchill address, we had dinner at Monte's on Hanover Street (thick juicy steaks) and who should walk in but Dan McGrew — he would know where to get a good steak!

It was difficult to pick out one's friends at the Garden but Bean Lambert and Hank Hoar had aisle seats, so were easy to spot. D. K. Taylor was prancing up and down the aisle for some unknown reason, so he, also, was easy to spot.

Where we really saw the '26 boys was at Jim's party, but time passed too quickly. In two hours I believe there are approximately 120 minutes; therefore, with 130 men at the party, unless I have forgotten how to do calculus (have you?) it allowed slightly less than a minute to see each man. But even that minute was good, and it made us all start thinking about that big reunion of ours that will be coming up in two years. The wheels will start grinding by fall, and there will be something to tell you about it in the next issue.

After Jim's party, about 20 of the Class walked across Boston Common to Locke-Ober's for dinner and the party continued. I can't remember everyone who was there because I was not aware that I was to become class secretary. From now on I'll carry a pad and pencil. At my table, however, Martin Fireman, Cecil Ogren, Morris Minsk, D. K. Taylor, Al Dolben and Bob Dawes partook of steak and lobster. It was one of those affairs that everyone left saying, "We'll have to do this more often."

Now summer is here with golf, gardening, fishing and vacations. May it be most pleasant for you, and if you are passing through Boston, don't forget to let us know. — GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston 10, Mass.

## • 1927 •

The following is quoted from the Nashua, N.H., *Telegraph*: "A. J. Tacy, 1080 University Place, has been named assist-

ant manager of the Market Research Division in the General Electric Company's Executive Department, it was announced today by E. J. Klock, division manager. A native of South Hadley, Mass., Tacy joined General Electric in 1927 as a student engineer on the Test Course, and in 1929 was assigned to industrial sales in the New York office. In 1933 he returned to Schenectady to join the Apparatus Department Market Research Section which had been formed the previous year. Mr. Tacy was transferred to the Turbine Division in 1941, and during the war was made secretary and later chairman of the company's Priorities Committee. After the war he joined the Electric Utility Division, where he has been responsible for sales to electric light and power companies in the New York, New England, Pacific and Northwest districts."

Additional General Electric news is found in the Holyoke, Mass., *Transcript-Telegram* as follows: "Harland P. Sisk, manager of the GE Plant here, will speak on the topic 'Current Manufacturing Problems' at a joint meeting of the Men's Clubs of the Mittineague Congregational and Methodist churches next Monday night at the Mittineague Methodist Church. Mr. Sisk, who is present chairman of the local Red Cross Drive, was appointed manager of the Holyoke plant in 1945. He received a Bachelor of Science degree in engineering, and trained in the various branches of company operations at the Pittsfield and Schenectady works."

Announcement is made of the appointment of G. P. Standley as assistant manager of rayon research in the Industrial Rayon Corporation. After teaching at M.I.T. for three years, Standley received his doctor's degree and then joined Du Pont. In 1940, he joined Industrial Rayon where he has concentrated on the development of special high-strength rayon yarns, particularly for use in tires. — JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, Inc., 50 West 50th Street, New York, N.Y.

## • 1930 •

A note of sadness enters our column in reporting the deaths of two classmates. According to word recently received from the Alumni office, Darrall S. Parsons passed away on May 28, 1946. He was a former student of Course XV and was general manager of the Raymond Parsons Construction Company of East Hampton, N.Y. Charles C. Ladd, Jr., died in Dallas while on a business trip on May 6, 1949. After graduation from Course X-B, Chuck worked in a patent law office, attended Fordham Law School, was admitted to the bar in 1935, and in 1942 became a partner in the New York firm now known as Curtis, Morris and Safford. He was an honorary secretary of the Institute and a member of the Committee for Financing Development.

Our Class was honored by the selection of Alan Bemis as speaker at the May meeting of the Alumni Council. He spoke as director of weather radar research at the Institute on the use and potentialities of radar in that field. Sam Zisman is the executive director of the Philadelphia

Citizens' Council on City Planning which is working for civic betterment. A new faculty member of Upsala College in East Orange, N.J., is Jules A. Larrivee, an associate professor in the mathematics department. After spending 18 years in Rochester with Eastman Kodak, Greg Smith is now assistant to the general manager of the Peabody, Mass., plant. The Smiths are living in Marblehead, the former home of both.

Remember that our 20th reunion comes next June and plan to be there! Meanwhile, a pleasant summer to you all! — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass. *Assistant Secretaries*: ROBERT M. NELSON, 2446 Iroquois Road, Wilmette, Ill.; ROBERT A. POISSON, 105 East 88th Street, New York 28, N.Y.

### • 1938 •

Our first note is a sad one from Cuyahoga Falls, Ohio. Bernard C. Riddell died on March 20, 1949. May we take this occasion to express to his widow the deep sympathy of our Class.

We have word of the marriage on February 18 of Bertha Ann Densmore of Portland, Maine, to Russell Brown in Arlington, Va. Russell and his bride are living in Falls Church, Va., and both are employed in geological survey in the Department of the Interior in Washington. — We don't know what his job is, but we have word that Robert A. Wharton, Jr., is now living in Brussels, Belgium, so any of you who are traveling there, please make note. Paul DesJardins has been elected secretary-treasurer of the M.I.T. Club of the Kanawha Valley in Charleston, W.Va.

Frank Atwater has some very interesting news to add: "Livingston S. S. Smith, still with Stone and Webster in Richmond, Va., on March 22 became the papa of Carter Livingston Smith. This is the second child for Tony and Dell, their first being a girl, Mabs, now age three. — Dick Muther, in the middle of April, took a flying trip from the Poconos, where he was directing the Methods Engineering Council's most recent management conference, to Hartford where he gave a fine talk on 'Production Line Techniques' before the Hartford chapter of the Society for the Advancement of Management. He spent the night with us here at 394 and we had a fine bull session before he hurried back to the Poconos. — Joe Krenn for the past two years has been serving very well as secretary of the M.I.T. Club of Hartford and keeps himself thoroughly amused during week days by serving on the engineering staff of the Fafnir Bearing Company and during week ends by skiing in the winter and sojourning at the seashore in the summer. — Marion and I recently visited Howie Banzett at their home in Dumont, N.J. He and Edna are, of course, very much wrapped up in their almost-two-year-old Bobby. Howie heads the production end of Alcoa's Edgewater screw-machine products division. — As for yours truly, nothing exciting to report. Our six-months-old Mary-Jane creates plenty of local interest these days. Handling Fafnir's industrial engineering section keeps me still out of mischief during the daytime."

The Class had its representatives at the Mid-Century Convocation. Among others there were: Dave Beaman, Norm Bedford, Paul Black, Anthony Chemel, Bob Eddy, John Glacken, Bob Harvey, Charles Henes, E. W. Lovering, Dick Muther, A. T. Rossano, Jr., Don Severance, Rudy Vogel, Al Wilson, and Dave Wright. — ALBERT O. WILSON, JR., *General Secretary*, 32 Bertwell Road, Lexington 73, Mass. RICHARD MUTHER, *Assistant Secretary*, Methods Engineering Council, 822 Wood Street, Pittsburgh 21, Pa.

### • 1940 •

John A. Vanderpoel has been named an assistant to Robert T. Collins, general production manager of the New Departure division, General Motors Corporation. Mr. Vanderpoel has already assumed his new position in which he will handle special assignments within the division's production department. John has been employed at the New Departure division since 1946. Prior to that time he served as a pilot with the Army Air Force and before entering the service for a span of five years, he was associated for more than a year with the Baldwin Locomotive Works at Eddystone, Pa.

George W. Hazen has been elected corporate member of the American Institute of Architecture, with assignment to the Washington state chapter. Mr. Hazen, following his war service, has become a member of Lawrence and Hazen of Seattle. — Theda L. Waterman, who majored in education while getting her public health master's degree as a member of our Class, is executive secretary of a year-old organization in Milwaukee, the Central Agency for the Chronically Ill. The organization, which she has headed since the beginning of the year, covers an entirely new field, and the office is only the third of its kind in the country. According to Miss Waterman, only Chicago, Ill., and Philadelphia, Pa., already have agencies for the chronically ill.

With this issue of Volume 51 of The Review we conclude ten consecutive years of news notes for the Class of 1940. Some of it has been quite brief, in fact we should say skimpy, but several of you have aided materially in keeping us going without a miss. Some of the rest of you lend a hand won't you? During the summer months surely many of you will run across other class members during your vacationing throughout the country. Drop me a line and let me know about it. — H. GARRETT WRIGHT, *General Secretary*, in care of Garrett Construction Company, Main Post Office Box 629, 510 Sherman Avenue, Springfield, Mo. THOMAS F. CREAMER, *Assistant Secretary*, 6 Berkley Road, Scarsdale, N.Y.

### • 1941 •

Checking in at the recent Convocation were Bill Schubert, who is with the Beatrice Creamery Company in Chicago; Rog Finch, who is proffing in the textile division; Phil Fresia, worldwide export, Gardner-Denver Company in New York; Bill Fader, Warsaw Elevator Company, Warsaw, N.Y.; Ivor Collins, General Elec-

tric in Schenectady; John Sexton, Bemis Association, Inc., Watertown, Mass.; Tom Waaland, Corning Glass Works, Corning, N.Y.; Will Compton, U.S. Plywood Corporation, New York; Leona Norman, Malden, Mass.; Ken Bohr, at the Institute; and Johan Andersen, your Assistant Secretary.

Les Corsa writes from Peter Bent Brigham Hospital where he is carrying on radioactive tracer research in the medical field. You will recall that Les received his M.D. from Harvard. We expect a visit down Philadelphia way this month from Les and his wife Pat. Mert Richardson has been appointed as supervisor of edible technical service in the research department of Lever Brothers in Cambridge. Mert will be in charge of technical services involving use of oils and fats in the baking and allied industries. Before joining Lever Brothers, Mert was associated for three years with Beatrice Foods Company, Chicago, in the special products division. Earlier, he was in charge of the quality control laboratory of the National Tea Company. Mert is married, has two children and resides in Medfield, Mass. Come on reader, get a promotion and we'll write up your biography, too.

Dave Weddell has been appointed as director of development for Monsanto's western division. Dave received his Sc.D. with us in 1941 and then joined Monsanto as a chemical engineer in the phosphate division's research department at the Anniston, Ala., plant. We received a note that Don Dixon takes time off now and then from his weather forecasting to talk before the Parent Teachers' Association in Quincy. On the marital front, Jacqueline Crandall became the bride of Bob Fano on March 26. Jacqueline attended Simmons College and the Modern School of Fashion and Design, where she is a member of the faculty. Bob received his Sc.D. at Technology in 1947 and is now assistant professor of Communications at the Institute. — STANLEY BACKER, *General Secretary*, 33 Harrison Avenue, Boston, Mass. JOHAN ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

### • 1942 •

We have been asked by Jerry Coe to inform the Class that he hopes to receive some nominations for a permanent class secretary, and intends to circulate a ballot next fall with this purpose in mind. As you know, our permanent secretary, Fred Baumann, was killed in action early in 1945, and the post has been vacant since then. Lou Rosenblum and the series of fellows who have been writing the notes have carried on the work, but there has been no single person who could be responsible for long-term affairs on a continuous basis.

Bill Seaton writes that he is now working in New York for United States Steel Export Company, the export subsidiary of United States Steel. Last year he took a master's degree at the School of Advanced International Studies in Washington, D.C., majoring in international economics. Bill Foley has taken a job with Chance Vought at their new plant in



Dallas, Texas. Felix DeLeo was in to see us some time ago. He is working for the Massachusetts State Police applying science to criminal investigation. He passed on the information that Leon Rubin is married and is living in New York while attending Columbia University. He also recalled that Al Dengler is living in Greenfield. We understand that Ernest Kenyon has been appointed a technical aide to the committee on food and nutrition of the National Academy of Sciences in Washington. Carl Jealous is working at Oak Ridge; he recently delivered a paper before a meeting of the division of industrial and engineering chemistry of the American Chemical Society. His work has been concerned with the structures necessary for carrying out chemical process development programs involving radiation hazards.

News of engagement and marriage continues at a steady rate. The well-known stimulating qualities of the Southern California climate are further attested by news of the engagement of Henry Lemaire to Catherine Crosby of Greenwood, Miss. Miss Crosby is a student at the University of Southern California in pleasant proximity to Cal Tech, Henry's present location. We hear that Bob Navin is engaged to Alice Ann Ritchie of Grosse Pointe, Michigan, and that a summer wedding is planned. — News of recent marriages include announcement of the wedding of John B. Arnold and Nancy McKenna of Hanover, Mass. A. Homer Skinner was married on February 25 to Judith Churchill of New York City.

Finally, your correspondent and Mrs. Kavanagh take great pleasure in announcing the birth of a second son, Thomas Whitney Kavanagh, on May 6. — **GEORGE M. KAVANAGH**, *Acting Secretary*, Room 4-055, M.I.T., Cambridge 39, Mass.

#### • 1943 •

John Goldsmith and the former Irene Lane McClune were married in the Kansas University Chapel at Laurence, Kansas, on March 8. The bride's home is in Michigan Valley, Kansas, but the Goldsmiths are now living at 210 Farmington Avenue, Hartford, Conn. A few weeks later, on April 2 to be exact, the marriage of Elizabeth Mills Uptegrove to Warren E. Mathews took place in the Community Unitarian Church in Summit, N.J. The new Mrs. Mathews' home is in Maplewood, and the couple are to live in Berkeley Heights, N.J. Warren is with the Bell Telephone Laboratories in Murray Hill.

The engagement is announced of Barbara Joan Sandberg to Stephen E. Woodbury, Jr. The bride to be is a graduate of Katharine Gibbs School; and before coming to Technology, the groom went to the University of Maine. Paul Colsmann and Hazel Mary Harris also will soon be married. Miss Harris lives in Buffalo, and graduated from the Chown School of Business.

It was not possible for me to be present at the Mid-Century Convocation at M.I.T., but among those present were Sid Hall, who is apparently still in Brookline, N.H.; Charlie Clapp, whose address

is now in Akron, Ohio; Bill Vallette, now living in Newburyport, Mass. Mort Goodfriend, until recently living in Brooklyn, N.Y., but now back in Baltimore; and Bob Reebeie.

News about two architects is of interest. The first is Cecil A. Alexander, Jr. He has recently been extensively decorated for his service as a dive bomber pilot in the Marine Corps Squadron 231. Most of his combat service was in the Marshall Islands area where he won a Distinguished Flying Cross with Gold Star and the Air Medal with eight Gold Stars. After all this, he completed his architectural training at Harvard and is now a member of Alexander and Rothchild, an architectural firm in Atlanta, Ga. The second man is Eduard Bullerjahn, who, you will recall, recently won the Swedish King's medal for architectural achievement, and is now doing other fantastic things. He has completed the design of a 500-ton yacht for King Faruk. The craft is now apparently being built in Genoa for the Egyptian Monarch. Haile Selassie wants a new palace, and has had a competition organized among architects to design it. Eduard has, it seems, completed his drawings and has submitted them to the Ethiopian authorities.

Tom Dolan has moved from Port Arthur, Texas, to Beverly, Mass. He is with Metal Hydrides, Inc. Bedrich Hettich has come back east too, for he has moved from Martinez, Calif., to Brooklyn. Walter Netsch, who was formerly at Oak Ridge, is now in Chicago, and Cameron Perry has moved from Philadelphia to Middletown, Ohio, where he is in the research department of the Armco Steel Corporation. Bob Snyder, recently graduated from Harvard Business School, is with Research and Surveys, an organization in Washington, D.C. — **CLINTON C. KEMP**, *General Secretary*, 29 Verlynn Avenue, Hamilton, Ohio.

#### • 1944 (2-44) •

If no news is good news then everyone in the Class is getting along very well. A letter from Bernard Rabinowitz informs me that he attended the Mid-Century Convocation with his wife. We had good representation from the Class and I saw Bob Plachta '46 and his wife, Bob and Mrs. Breck, Bob Peck, Fred Blatz, Hank Bourne '47, Frank Walke '48, and Clyde Snyder. In addition, Bernie met Jay Kogan from Detroit, Eddie Roos '47, Lee Eagleton from Yale University, Al Michaels from Technology, Bob Isaacs out in Newton, and Ed Eaton in Boston. Bernie further states that he is with Atlantic Chemical Corporation, 127 Prospect Street, Passaic, N.J., and would like to hear from any of the boys in that neighborhood.

Bob Peck is a sales engineer with the Johns-Mansville organization in the New England area. Bob is now our Alumni Representative at the alumni meetings at Technology and he is also Class Agent and is in charge of raising the funds for our 25th reunion.

Edgar Eaton has been nominated for assistant secretary-treasurer of the Ameri-

can Institute of Electrical Engineers of the Boston section. Edgar is with the Allis-Chalmers Manufacturing Company as a field engineer. Joaquin Luttinger, who received his doctorate in 1947, has received one of the American Telephone and Telegraph Company Jewett Fellowships. He is a physicist and has been studying in Zurich, Switzerland, and plans to continue his research on the theory of the superconductive state. He plans to continue his work in the United States.

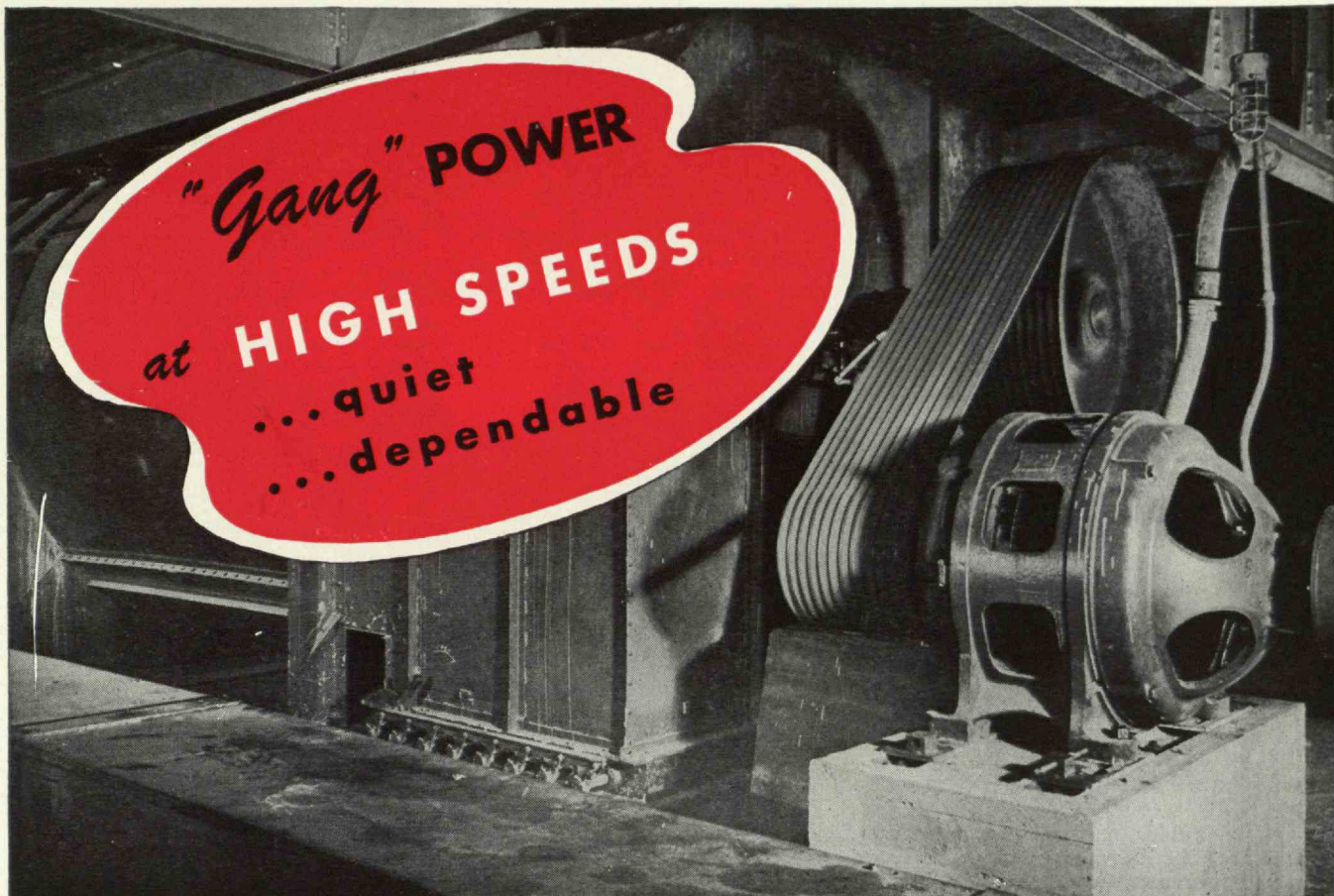
Jim Ruoff is now engaged to Mary Scholl of Rochester who is a graduate of Duke University. He is now working with the Eastman Kodak Company. Judson Cole married Shirley Parker of Mt. Lebanon, N.Y., last February. They plan to make their home in Mt. Lebanon where Judson is working. Dick Livermore is engaged to Rose Naves of Ipswich. Dick is now assistant to the purchasing agent at the Naumkeag Steam Cotton Company in Salem. They were to be married in Beverly on June 26. Margory Spencer of West Hartford, Conn., has announced her engagement to Bev Tucker who now is with the Chance Vought Aircraft Corporation in Dallas, Texas. Doris Thompson is engaged to Arthur Bryant. — **WILLIAM B. SCOTT**, *General Secretary*, Mellon C-41, Harvard Business School, Boston 63, Mass. **MALCOLM G. KISPERT**, *Assistant Secretary*, Room 3-208, M.I.T., Cambridge 39, Mass.

#### • 1946 (6-46) •

She said "I do" and he said "I do" and they did. That briefly is what newspapers and cards are saying of several classmates this spring. Angus MacDonald, XVI, and Phyllis Winterbottom of Harwichport, Mass., were wed on March 10 at the Church of the Holy Spirit in Orleans and went down to Cuba for their honeymoon. Angus attended both Technology and Harvard, receiving his master's in Course II in '47. Arthur Ryrholm, X, and Dorothy Woodward of Arlington, Mass., were married on May 19 at the Unitarian Church in Arlington and spent a week in the picturesque Pocono Mountains of Pennsylvania. They are now at home in East Orange, N.J. During the war, Art served in the Pacific theater as a captain. He is now in the plastic research division of the Bakelite Corporation, Bloomfield, N.J.

Dorothy Fisher, VIII, and George Lehman were wed on June 11. Dorothy attended the Boston University School of Education after leaving M.I.T. and obtained her Master of Education. Dorothy was on the staff of the Division of Industrial Cooperation at Technology after graduation in '46 and is now the mainstay of the science department of the Wyalusing Valley Joint High School in Wyalusing, Pa. She writes that she "loves teaching." Dorothy expects to remain in Wyalusing for the summer and then to locate at Pennsylvania State. — **HARRY A. AUGENBLICK, JR.**, *General Secretary*, 67 South Munn Avenue, East Orange, N.J. **JAMES W. CHURCH**, *Assistant Secretary*, 103 Quincy Street, Roxbury, Mass.





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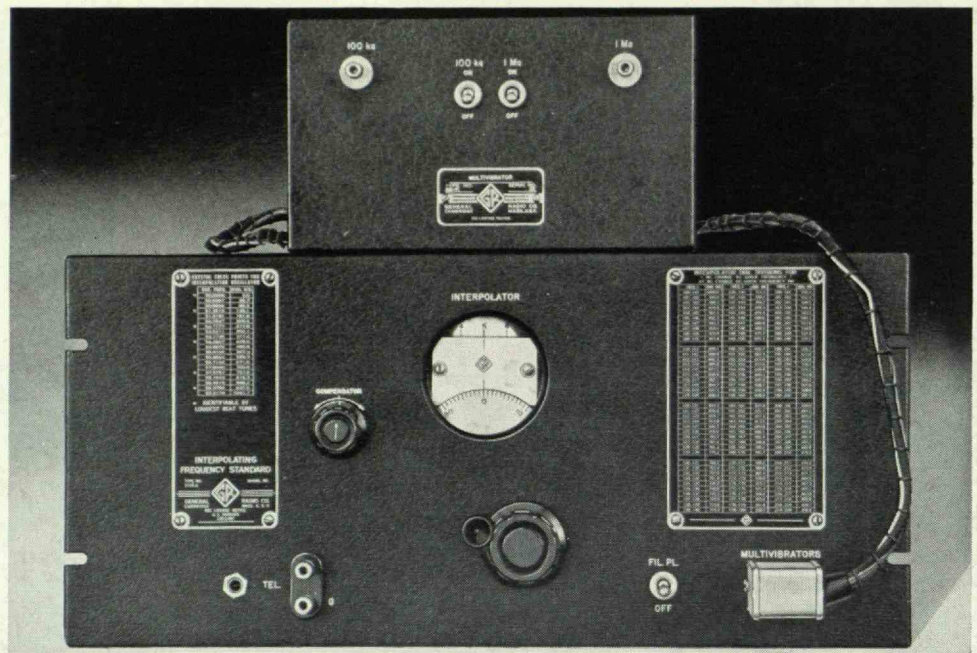
Thomas H. Boyd, '23

Wilder E. Perkins, '25

Charles P. McHugh, '26

Albert W. Beucker, '40





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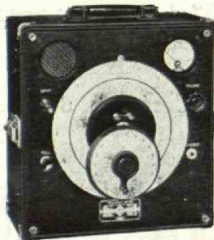
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